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ORIGINAL ARTICLES.

ON THE TREATMENT OF DIPHTHERIA.

BY J. W. BROWN, M.D., OF CENTRAL NEW YORK.

Read in the Section on Diseases of Children of American Medical Association, May, 1884.

Omitting the historical review of the nature and origin of this malady, together with its pathological, histological and disputed theories of formation, and practically ignoring symptoms, diagnosis and prognosis as beyond the scope of the present paper and time at my disposal, and assuming that we are all familiar with this affection and that our results have been disappointing when faced by an epidemic, by the unfavorable mortality averaging, as Oertel claims, 40 to 50 per cent. the question naturally is suggested, Can we lower this fearful percentage? I present, gentlemen, a few facts gained from a study and experience of over one hundred and twenty (120) recorded cases occurring in my individual practice during a period of about fourteen (14) months. Its plan is not new, being advocated by Tropean, and endorsed by Dr. Whittaker, of Ohio, at the meeting of this Association in Richmond. It promises, I think, more satisfactory results than common, and while recognizing the local nature, it does not advocate the radical caustic treatment of recent date and prominent endorsement. During a practice of about ten years the usual sporadic cases were observed and with indifferent treatment the most of them recovered. The present epidemic began in August, 1880, and continued with varying severity for about the time stated. The causes are obscure, as we are situated in Central New York. The surface of the country is rolling and well drained; the area of territory invaded may be estimated as about one-half (½) mile by four (4) miles, averaging a descent of one hundred feet to the mile. Geological formation is limestone and we have no stagnant water. During a residence of nearly nine years no other epidemics were observed. General sanitary condition the average of country villages. Population about one thousand; manufacturing (mills) and farming the principal occupations. Water supply mainly obtained from wells and springs; no sewerage, but the usual country "*back house.*" The general type was severe, and no case has been recorded where distinct exudation was not present. The catarrhal and croupous forms were readily recognized, many of the latter proving malignant. The catarrhal form was readily merged into the croupous, and fauces were generally well covered in twenty-four hours.

The invasion was generally sudden—chilliness being first complained of, which, with the pain in back and soreness of throat, soon told the story. I regard it as *contagious*, having personally acquired it twice in less than six months from close attention to bad cases. The temperature I could not rely upon, severe and even fatal cases having no extreme elevation from normal.

The complications were numerous, and convalescence in many instances protracted. My mortality was light, considering the severity of the epidemic. The following are numbers of fatal cases as they occurred, with analysis of causes of death: Nos. 1, 6, 17, 19, 36, 66, 68—total, 7. In case I. nasal hæmorrhage and asthenia can be assigned as the cause, and was unavoidable and almost assured, as she was not seen until about forty-eight hours before, and with neglect and lack of treatment fell an easy victim. In case VI. death was due to erosion of arteries in posterior nares, together with general debility. This case had been progressing finely, but owing to my acquiring it, as I think, from him, and being confined to my bed, I did not see him. Death ensued in about forty-eight hours, although his throat had been perfectly cleared at my last visit. In case XVII. death was undoubtedly due to the extreme severity. An overwhelming attack, with complete systemic infection. Membrane formed so rapidly and blocked throat so completely, that scissors had to be used to keep passages open and prevent suffocation. Case XIX. was convalescent. Membrane had been entirely cleared, with no re-formation for forty-eight hours. Death very suddenly from paralysis of the heart. Case XXXVI. was malignant, and died from complete systemic infection and prostration. Sloughing of tonsils and nasal hæmorrhage. Case LXVI., death was peculiar, and history not satisfactory, but I should judge from asthenia. I saw him forty-eight hours previous, and throat was practically clean. Had been severely affected, but was convalescent; appetite good, and I considered him out of danger. Was prostrated with my second seizure, and I learned that a fatal result terminated the battle two days subsequently. Case LXVIII., death in fifty-two hours. Malignant, tonsils sloughed, nasal hæmorrhage. Whole number of fatal cases, seven (7); from disease alone, three (3); from complications, four (4). There

were but three cases in which treatment was without apparent effect, and who succumbed to the disease proper, and yet these measures were successful in relieving the fauces of the remainder, who perished from the complications.

The ages varied from an infant of 4 months to a lady of 60, but was mainly among those under 16 years. I regard it as a constitutional disease, with local affection of the throat as its most characteristic symptom, and consider the chief dangers due to systemic infection, with subsequent poisoning and prostration, and that to the *immediate* mitigation of throat symptoms by *topical* measures, together with urgent stimulation and constant support, must our chief reliance be made. I do not *dare* to sit down and let the throat take care of itself. No *half way* measures succeed. We *must be* thorough, and we must not palliate, or the "golden stair" will be ascended before we are aware, and our fancied security be an illusion. Two attacks with alarming severity is my excuse, so I may be allowed my objections to this delusion that we should cherish, "DON'T DO IT." And now, gentlemen, what shall we do? At my first visit I give 5 grains of calomel every four hours until bowels are thoroughly evacuated. This starts up secretions and eliminates much effete material, and in itself is of great utility. I have salt pork cut thin and rubbed full of table salt and bound over tonsils from ear to ear, fastening at the vertex (stitching through and through the muslin will prevent troublesome slipping). I touch the throat in ordinary cases once daily (although much depends upon activity of membranous formation), and in severe cases twice or more, though not too often, as increased irritation following too frequent applications in my own case was a painful illustration, and rendered me more careful afterward. Absorbent cotton held in a sponge-holder proves a happy medium for making applications, which consist of the following:

℞ Ferri pr. sulph.....3i.
Glycerine and .....
Pure cider vinegar āā.....3ss. M.
S. Apply.

This when gently applied (not swabbed) and held for a few seconds in apposition to affected parts has the effect of penetrating the deposit, which shrivels and falls off, and also hardens the engorged tissues beneath. This in many cases does not occur at once, but may require repeated applications. Do not be tempted to make them too often, and above all, use no force in detaching that which is apparently loose, as I can personally condemn its bad effects. Septic absorption is less active from the coagulation and hardening of subjacent structures. Upon no account is force or swabbing to be resorted to, and unless suffocation is imminent or fear of swallowing membrane present, I would not forcibly detach it, as it forms all the more rapidly upon the torn and raw surface beneath, and systemic infection is all the more profound. Gently place cotton in apposition, and gentle pressure will be all that is required. I atomize throat freely, frequently and thoroughly, depending upon the severity of the case, with:

℞ Ferri pr. sulph.....grx.
Pure cider vinegar.....
Pure water āā.....3ss. M.
S. With atomizer.

In nasal diphtheria, if inhaled at time of atomization, benefit will be more pronounced. Any atomizer will be found convenient that throws a liberal spray, and in epidemics it is indispensable that each patient should procure his own, which must be scalded frequently. Atomizer must be well applied to affected parts and spray thrown well up in posterior nares for a few minutes, when practicable. Always *know* that it is thoroughly done or you will be disappointed in your results. Young children may require force, but the atomization must be made at short intervals, and have nurses fully understand the imperative necessity of complying. Among the worst cases of laryngeal variety I ever saw was a child of seven years, whose recovery is due to persistent and thorough atomization given by his father. Epiglottis was loaded for two days, but we persevered and eventually won the battle. Gargles of brandy and water, chlorate of potassa, salt, pepper and vinegar are useful but must in no way interfere with thorough and regular atomization. As exudate re-forms more rapidly during night, greater caution and care are required. As constitutional remedies I give after bowels are freely evacuated:

℞ Tr. ferri chlorid.....3ss
Saturated solution potass. chlorate...
Syrupi simplex āā.....3xjv M.
S. 3i every hour.

Three grains each of potassa chlorate and quinia sulphas every five or six hours is generally beneficial. All should be cautioned against swallowing the membrane, as it produces symptoms resembling arsenical poisoning. When taken in quantities, potassa chlorate in solution in teaspoonful doses occasionally is of value as a neutralizing agent. Know that the nursing is of the best and not *too* frequent changes; *know* that your directions are obeyed as to the minutiæ or often your efforts are in vain. See personally that *enough* nourishment is taken, *nolens volens*. Milk is to be preferred as being more readily assimilated; beef tea, extract, etc., etc., may be used. I advocate stimulants from the first, even in mild cases. There seems to be an enervation of heart even from the first; a diminished "vis-a-tergo," and heroic stimulation may win the day as I personally know, even when convalescent; and I think my results were better and I had less alarming cases of enfeebled heart after my adoption of more thorough stimulation. Good bourbon or rye whiskey or brandy can be used, as may be preferred. The quantity must be regulated by the judgment of attendant and effect produced, the pulse being our guide. I gave over a pint of whiskey in less than eight hours to a boy of seven years, and no ill effects were perceptible as he recovered, thanks to the stimulation. Kidneys must act properly, also bowels at least once every second day.

Isolation *must be enforced*. Fumigate daily with sulphur upon live coals. Disinfect all discharges with cupri sulphas. Take plenty of fresh air, keep

out draughts. In my family of seven none contracted disease, although two were under three years of age. Same results generally when orders were fully obeyed.

A history of my own attacks may be of interest and for once I know all about it. The first was extremely severe. Membrane very thick and re-forming very actively. Throat made worse by too frequent applications. Prostration extreme, malignant tendency for twelve hours, greatly diminished heart's action and enfeeblement. Tendency for heart clot on fifth day. Convalescence rapid. Loss of twenty pounds. The second attack was due to exposure to Case 68 where I was compelled to plug nostrils. Throat affected in twelve hours. Blood oozed from fauces for twenty-four hours before exudate appeared, which was of the greenish malignant kind. Right tonsil partially sloughed. Recovery protracted, and I did not feel perfectly well for over a year afterwards. Topical measures and *energetic* stimulation were strictly enforced.

After convalescence is established, good food, tonics and fresh air are required.

Tracheotomy was performed once, but I would not advise it again. I have abandoned all treatment for the following, and base my deductions upon results obtained with no selection of cases. Let our gospel be one of thoroughness, stimulation, topical applications, tonics and nourishment. Look upon the localized deposit and relieve it, and your battle is more that half won. Do not be deluded by this lime water treatment, and abandon the use of nitrate of silver. Avoid harshness, but use whiskey.

DISCUSSSION.

Dr. S. W. Smith, of New York, wished to know how the essayist made his diagnosis, as other diseases closely resemble diphtheria, such as follicular pharyngitis, and can only be recognized by washing off the membrane.

In the dispensary where he was assistant there were 175 cases seen monthly, or about 1,800 cases yearly. Met during the two years 25 cases of diphtheria. Catarrhal tonsillitis and follicular pharyngitis in many cases resemble diphtheria, but in those diseases the membrane can be removed without hæmorrhage. The disease can find a point of departure from other parts of the body besides the tonsils. Recalls a case where the first manifestation was on the genitals and passed into the vagina. The child died.

The statistics of the State of Vermont give a mortality of 50 per cent. Dr. Billington's (chief of the Dispensary service) treatment consisted in washing out mouth and nose with a solution of salt water and giving internally chlorate of potassium, tincture of the chloride of iron and glycerine.

Quinine and alcohol were not given because there did not appear to him to be any indication for their use. Lost a case where it was impossible to wash out throat. Believes the disease to be constitutional and local in character.

Dr. A. Behrend, Washington, D. C., called attention to the fact that the cases here were uniformly fatal when hoarseness commenced.

Dr. Franklin, Ohio.—Why does Dr. Smith object to quinine?

Dr. Smith.—Because fever went down when the throat was well washed out. Milk was given freely during the attack.

Dr. Franklin.—Out West it is necessary to give quinine on account of malaria. Has found iron and quinine of great benefit. Also employs a gargle of salt and vinegar as was first recommended by Trousseau. This brings the membrane up in large blocks. Has had few deaths since he adopted this line of treatment. In rheumatic throat trouble guaiacum has been found good. Rheumatism complicates this very often.

Dr. J. Lewis Smith, N. Y., does not agree with those who hold that the disease is a local one. Local treatment does not cure. Must be constitutional because the kidneys are so early affected. It is either constitutional at first or becomes so very quickly. What must we use if it is a constitutional disease? Micrococci are found everywhere, kidneys, etc. Have we any remedy for this disease? Alcohol appears to meet the indication and can be used in large quantities without intoxication. This is much better than iron and quinine. Has been led to look with distrust on the antiseptics. No agent can act on the micrococci without hurting the system. They would destoy the normal cells as quickly as the morbid matter. The sulphite of soda, phenic acid, etc., do not accomplish as much as alcohol. Jacobi and others look with favor on Pepper's treatment with the bichloride of mercury in small doses. In syphilis this improves the blood corpuscles. In this we may have an important agent. Tenesmus may result. This is a good agent according to New York physicians. Looks with distrust on statistics. The disease varies the same as the scarlatina type changes. Recalls the case of a physician who had not had one death among fifty cases of the disease and immediately afterwards lost his own child with it. The local treatment is important because it destroys the micrococci and prevents septic poisoning, Septic absorption occurs where the membrane invades the cells of the mucous coat. Uses in nasal diphtheria:

℞ Sodium chlorid.....ʒi.
Acidi Boracici.....ʒss.
Aquæ.....Oi.

Or,

℞ Hydrarg. Bichlor.....gr. ii.
Aquæ.....Oi.

What is to be done in diphtheritic croup? Tracheotomy? No. Dreads to be called to these cases. No irritating substances, such as bromine, should be employed on such surface, as they only extend the inflammation. Has found the alkalies good in breaking up the fibrinous membrane. Alkalies disolve both fibrine and mucin. Great benefit is found in watching for the hoarseness and commencing treatment at once, and mothers are instructed to be on their guard about this. Use steam atomizer with liq. potassium, ʒiii; strong aqua calcis, Oi.

Dr. Burrows, Ill., agrees with Dr. Smith, but employs sulphur for insufflation, as there is danger of the

nasal injections producing otitis media. It also has some effect on the blood corpuscles.

Dr. Harris, of Va.—Results claimed for treatment are much better than Virginia gives. In the epidemic two years ago three-fourths died. They were in a state of collapse from the beginning, and never rallied. The regular treatment was adopted. This is the dark side. Then, on the other side, all cases recover without treatment. These were typical cases. In only a small proportion of the cases is the larynx affected. Spasmodic croup can be mistaken for true croup and diphtheria. Has seen two cases cured by Pepper's treatment.

Dr. Miller, Allegheny, Pa.—The thirtieth of a grain of bichloride of mercury given every hour softens the membrane when the remedy acts. Pay attention to the well. Examine every day. In his own family pilocarpine had a good effect. Also the permanganate of potassium acts well locally.

In the County Orphans' Asylum has not used a pint of alcohol during some years, but gives milk in large quantities.

Dr. S. C. Busey, D. C.—There are three forms of the disease. The first can only be recognized by the resulting paralysis. The second can be recognized and treated. The third all die.

Mistakes are made frequently; the simple can be converted into the severer form. There are more deaths from the disease in country towns and more deaths where the simple (catarrhal) throat troubles prevail. It is both local and constitutional, for data from the census reports show that it is not always constitutional. In Virginia the cases were dead from the beginning. Certain number of local cases can become constitutional. Local treatment is very important. Dissolve membrane off first, and then apply oleate of mercury. Solution of nitric acid, 1–3, or spray 1–5, best to remove membrane. No case lost where this was done. Support with milk and beef tea. The former best. Internally give chlorate of potassium, tincture chloride of iron, and alcohol.

Dr. Ulrich, Pa.—Did the doctor make a distinction between diphtheritic and membranous croup?

Dr. S. W. Smith.—The latter is distinct from diphtheria, but during an epidemic, diphtheria can have diphtheritic croup engraved on it.

Dr. Ulrich.—We can have both diphtheritic and membranous croup. The treatment is different. Has not changed treatment in diphtheria since an epidemic seen in Louisiana a number of years ago; 13 cases died at the outset of the epidemic. Had good results with large doses of chlorate of potass. and tincture of chloride of iron. Does not neglect local treatment, but does not rely on it. It is difficult to use anything. Muriatic acid and honey is a good application. Physicians do not use enough of iron in these cases. Large doses of calomel have been given; acts same as the bichloride of mercury.

Dr. Free.—Is not chlorate of potassium injurious in large doses? Has seen several deaths from it, due to kidney complication. It is considered good treatment in his county to save 80 per cent. Uses stimulants at once in large doses. Tincture of the chloride of iron is used, but omits quinine. No reason for it except that it disturbs the stomach and has slight antiseptic effect. No deaths from diphtheritic laryngitis in his county. Milk and beef tea (home made and Johnson's) employed. Always uses constitutional and local treatment. Meets with paralysis in all cases. In answer to question said that he used half to two ounces of rye whiskey every two hours.

Dr. Hicks, of Virginia, said cases of diphtheritic laryngitis were all fatal. About two cases usually occurred in an epidemic. Treatment depends on theory. Diphtheria cannot arise from catarrhal diseases, but the latter can predispose to it. Like only begets like. Why do physicians prescribe chloride of potassium and the tincture of chloride of iron? As antiseptics? Sepsis does not occur until late in the disease. Chlorate of potassium is very bad for the kidneys. The disease can be divided into three types.

1st. Mild cases. All get well. We do not know how the disease does when left to itself. Formerly, pneumonia (an inflammatory disease), when actively treated, gave a mortality of 30 per cent. Now, when left to itself, there is only a mortality of 5 per cent.

In the second class certain ones can be cured with food and tonics. Germicides are to be used.

In the third class all die. Severe treatment does no good.

Mild solution of chloral good. Quinine also good for fever. The disease cannot be studied in country practice, because there active treatment must be resorted to or else the patients employ some other physician.

Dr. Holton is a firm believer in the contagiousness of the disease. Gave several examples to illustrate this. How is the poison of the disease carried? It can be conveyed after recovery, and without the person conveying it having had it. Formerly thought it to be a constitutional, but now believes it to be a local disease. Germs accumulate and fructify on the mucous surfaces. Believes in local treatment. This depends on form. In 113 cases there were 13 deaths. Two deaths in cases not treated. Nine of the other eleven were treated by Homœopaths. Where there was no treatment death resulted.

Uses chlorine as recommended by Watson, but stronger. Believes in whiskey but not in quinine. The latter acts upon the blood corpuscles, and these are not affected in diphtheria. Can be of service later on in the disease by its effects on the lymphatic system. Stimulants are necessary.

Dr. Hicks, of Vermont, believes that it is contagious, and gave examples. Circumstances modify its contagiousness.

Dr. Park, Dauphin Co., Pa.—There are many cases of diphtheria where no communication has taken place. Death is rare, except from diphtheritic laryngitis. A gargle of tannic acid, carbolic acid and glycerine is in general use. Does not believe in contagiousness.

Dr. Wm. Lee, Md.—Success depends on the diagnosis. Nothing is so difficult as to diagnose diphtheria from catarrhal angina. Never call a case diphtheria, unless both tonsils are affected or patch extends behind uvula, or pharyngeal folds. Both

tonsils are very soon affected. In diphtheritic coryza the secretion microscopically shows all the elements of diphtheria. Employs resorcin locally and constitutionally, instead of alcohol. Does not believe in mopping the throat. Has seen children die in the arms while being mopped. Treats all cases as contagious.

Dr. Ulrich, Pa.—The pharyngitis can be the first stage of diphtheria. We cannot make a distinction at first. It cannot culminate in diphtheria. The latter is constitutional, the former not.

Dr. Busey.—Cannot diphtheria be engrafted on pharyngitis?

Dr. Ulrich.—Yes. The latter can be the starting point. The system is contaminated with the diphtheritic poison.

Dr. S. W. Smith.—The distinctive sign is that the deposit in pharyngitis can be washed away, which cannot be done in diphtheria. Does not believe the disease to be contagious. There is no danger of ear trouble in washing out nose.

Dr. Brown.—The paper was to show the good effects of the sub-sulphate of iron in diphtheria. Regards hoarseness as a valuable sign of diphtheritic laryngitis. Has found vinegar a good solvent of the membrane. Temperature curves are valueless. It is a constitutional disease, and tracheotomy has been fatal in all cases where it was performed. But the patients had an easier death. Has had no experience with the bichloride of mercury.

ON ASSURING HEALTHY DENTINE OVER ENDANGERED PULPS.

BY JACOB L. WILLIAMS, M.D., BOSTON, MASS.

Read in the Section on Oral and Dental Surgery of American Medical Association, May, 1884.

In saying endangered pulps I mean cases where the pulps have but little of the natural covering of dentine in the depths of cavities, which covering is very apt to be more or less tainted by disease, that is by the agents that have produced caries.

Let us look at the conditions here existing. There is acid with fermentive action, often in full sway, seeming at first sight to demand the most decided and effective neutralizing and corrective applications. But, just beyond lie some of the most highly and delicately organized tissues of the whole body; fibres, that if rudely set vibrating will be likely to continue or repeat their vibrations in a very serious way; tissue, which if inflamed, there is none more doubtful of survival; and we must remember that the life of the pulp means additional years of usefulness to its organ.

These circumstances I fear are often too little considered in the use of violent or caustic applications.

But what should be done? Perhaps my ideas on this point may be best given by mentioning a plan of treatment for such cases that I formed, tested, and adopted during the years 1847 and 1848; and which in its general principles I have found to be most satisfactory up to the present time. Of course, since that date new materials have been added to our list of available correctives for diseased conditions.

After first removing the loosest débris, I applied a mild antacid such as aqua calcis or a solution of bicarbonate of soda, after thorough saturation with which, I treated the cavity for the correction of fermentive elements by the application of a solution of chloride of calcium, also very dilute creosote (we now have several substitutes for that). The cavity was then dried and sealed up for from two to three weeks, when it was opened and the *mild* saturation repeated, adding perhaps a mild astringent, such as tannic acid in weak solution, to the latter application. Then it was sealed up again, generally for a longer period, and the dressing was repeated at proper intervals until permanent health of dentine was assured.

Now with these mild correctives we have a greater chance of avoiding undue irritation of the pulp than with stronger applications; but they will be more or less transient in their effect, and therefore will require frequent repetition, which may be less frequent as the dentine gains in soundness and health.

By this method we help nature in the line of her preference, that is to protect rather than injure a vital point, keeping the disease in check to give her opportunity.

It may be, and has sometimes been said, that this treatment is very troublesome, and, why not make one strong application, and trust that nature will do the rest? I reply that the great objection is that while a strong or caustic dressing is not always lasting in corrective influence, it adds vastly to the possibilities, if it does not make sure, that the reparative action of the pulp will be interfered with, resulting in failure of the ultimate object of secondary deposit. Instances of this sort are often seen in practice; and in my observation the proportion of success of the mild repetition plan is far beyond that of the single capping practice.

Of course there will be some chance of non-success in many attempts to save the pulp, depending often on constitutional as well as local causes, and both may be obscure. The best and most promising efforts may be thwarted by neglect of the patient to report at proper times, or by interruption of the general health. Or, again, when cases are nearly ready for a permanent operation, they may be piratically appropriated by some person who very probably will speak lightly of the treatment that has brought the teeth into condition for his profitable seizure. But still our highest duty is to save life rather than to destroy or endanger it.

Representative cases might be related from a large number with various phases, but to describe them minutely would task both your time and patience.

Plaster of Paris was first used as a cap for the exposed portion. Oxide of tin was also mixed with the gutta-percha.

One rather extreme case I might mention, occurring in 1854.

A young man aged 25, upper left first molar having a large and deep cavity on the mesial side, with the pulp covered only very thinly by softened and disintegrated remains of dentine.

But the pulp was apparently uninjured, and on inquiry I found there had been no pain, and nothing to indicate the existence of inflammation in any degree, which was an encouragement to give the pulp every chance to live and protect itself by secondary dentine.

I saturated the cavity first with aqua calcis about half strength, then with solution of chloride calcium; but this causing slight sensation I reapplied the aqua calcis with the effect of stopping pain.

I then applied a *mild* non-irritating antiseptic in proportion about as follows, viz: a wood creosote (at that time the best known antiseptic of its kind), one drop to one drachm of alcohol, adding two drachms of water, after which I dried the cavity and covered the depth over the pulp with a mixture of oxide of zinc, five parts to one of gutta percha mixed with its bulk of yellow wax, over which I placed carefully, without pressure, and filling up the cavity with the gutta purcha and oxide of zinc mixture, melting the wax. After two months I unsealed the cavity, repeated the antiseptic with the addition of a trace of tannic acid; this at first caused sensation which was readily dispelled by aqua calcis. I then dried and sealed up the cavity; at the end of four months repeating the above treatment, twice again after six months, and finally after about eight months, making more than two years in all, when there was a firm, hard almost transparent floor of new dentine, from which the former disintegrated material was readily brushed off by a light touch of an instrument. After placing an inert non-conducting material (a piece of fine white silk saturated with wax) at the depth of the cavity, I filled with gold. Two years afterwards a small cavity occurred on the distal side of the same tooth, which on preparing to fill I found as sensitive to the instrument as if it had been the first cavity the tooth ever had, proving the unimpaired vitality of the organ, which continued several years after and during the life of the patient.

DISCUSSION.

Dr. W. W. Allport, Chicago, Ill.—Was certainly very much interested in the paper, and the line of treatment mapped out by the author. It has been the usual practice to apply antiseptics in these cases, creosote, carbolic and eucalyptus, etc., in various strengths and then to immediately cap with some non-conducting material like gutta-percha, oxychloride or oxyphosphate of zinc.

The first important point to be gained is to neutralize or destroy the agents of decay, and then to protect the pulp from irritation of every variety.

This can best be done by using a non-conducting material directly over the pulp and then to fill the balance of the cavity with a substance sufficiently hard and firm to prevent irritation from mechanical pressure, but do not see why the treatment need be continued over so long a period as that practiced by Dr. Williams.

Dr. J. L. Williams.—The object in continuing the treatment over so many months is to be sure that the active causes of decay are destroyed or rendered inert, and to guard against pulp irritation by frequent dressing with mild remedies, rather that to run the risk incident to the application of such intense medicaments as are commonly used.

Dr. Allport.—I have heard something recently about a new remedy for the treatment of this class of diseases made from the oil of cloves, and known as eugenol. It has been very highly recommended as having a decided fatal influence over germ life.

Have had no experience with it myself, but would like to hear a report upon the subject from those gentlemen who have experimented with it.

Dr. A. W. Harlan, Chicago, Ill.—Dr. Williams spoke of his treatment being to antagonize the acid or acid ferment. Such treatment could be only of temporary benefit; the remedies must be of sufficient strength to destroy the agents of fermentation. Most practitioners are in the habit of swabbing the cavity of decay with creosote, carbolic acid and other like remedies, and after temporarily sealing it up for a few days, capping with gutta percha solution, oxychloride of zinc, metal caps with various forms of dressing placed upon the under surface and permanently filling the cavity of decay. But in such cases we have no means of knowing whether there has really been any deposit of secondary dentine, and I believe in a vast majority of them no secondary deposit occurs.

FRAGMENTARY COMMENTS ON SOME OF THE PRINCIPAL METHODS OF OPERATION FOR "STONE IN THE BLADDER."

With Special Reference to Allarton's Method, Also in Combination with Lithotripsy, Urethro-Lithotripsy, Urethrotomia Lithotriptica, Including Besides Critical Remarks Upon the Discussion of the Progress Made in Lithotripsy and "Lithotomy" at the Late International Medical Congress held in London, England, and divers other subjects comprising the Urinary Organs.

BY M. SCHUPPERT, M.D., OF NEW ORLEANS, LA.

[CONTINUED.]

The high recommendation of litholopaxy was no doubt also influenced by "avoiding the bloody knife," though we have seen that even Sir H. Thompson recommended a combination of the two methods, "lithotripsy and lithotomy," neutralizing thereby the highly praised distinction and benefit attained by the exclusive adoption of litholopaxy.

How different all of this becomes in selecting the operative methods of Allarton, in the inestimable boon of which method the risk of the so much feared "bloody knife" is reduced to a mere myth, in which the bladder is secured to remain even more intact

than in Bigelow's litholopaxy, and with which it shares all the benefits if combined with lithotripsy! Well may we say that by the nearer and better access to the calculus, by its total removal, either entire or in combination with lithotripsy, of even the largest calculi with the more complete, surer and quicker withdrawal of its fragments, and displacement of that element, which renders also Bigelow's operation still dangerous, *the urine*, the pærineal median urethrotomy of Allarton stands to-day inferior to none of all the diverse methods of cystotomy, litholopaxy not even excluded. That mentioned danger from the urine, including the feared recidives of phosphatic concrements—of both more at a later time—have also induced even admirers of Bigelow's method to declare "that after all, nothing was won by it." The crushing of big and hard stones, if necessary, by the introduction of the respective instruments through the pærineal wound, instead of carrying them through the whole urethra, will also permit to build the instruments much more solid and powerful, so that they will not act at the beak only, which is still a defect in Bigelow's percuteur. The knife finally causing merely an incision through the urethra, will equally be deprived of its "bloody" and "dangerous" character. Of all the partakers in the discussion of the main subject under consideration in the International Medical Congress, there was not one voice heard in opposition to the dictum of the presiding officer regarding the operation of "lithotomy." It was as if the enthusiasm for the American operation had swamped all other questions. I am, indeed, far from objecting against a well-founded enthusiasm, and less so in view of the merits of our own Bigelow; but the assertion that "we had nothing to show in the progress of the knife in that field," was an injustice toward those surgeons who had proven by their success that there was at least one, if not another, method well worthy of a special consideration and support.

The only preparatory manipulation Allarton's method has in common with Bigelow's operation, consists in the dilatation of the urethra, but with the exception that in urethrotomy strictures, which would render the introduction of lithotriptic instruments impossible, would here seldom interfere. The urethra, or that part of it from the opened membranous portion to the neck of the bladder, will permit a far greater extension, and without causing the least laceration, than *Otis'* measurements would seem to warrant. In my last operation after Allarton's method, I removed a calculus of near half an ounce weight, the circumference of which, including the branches of the fine polished forceps, measured 82 mm., and the extraction of the calculus was performed without the use of any extraordinary force, and without laceration of the parts. Among the main objections against this median cut stands the statement that no further dilatation of the prostatic portion of the urethra beyond 50 or 60 mm. was possible, and that any further efforts of dilatation would produce laceration (*Ellis, Teevan*). That statement I may conscientiously contradict, since in my operation not a drop of blood followed the extraction of the stone, which in case of a laceration might certainly have been expected. Not even the finger, introduced into the urethra, presented a trace of blood. That in case of a previously diseased urethra, or of the prostate, in strictures, or by a rough handling, such lacerations might happen, I will not deny; yet we know from the experiments of Simon to what an extent and in what short time, by a careful and gradual dilatation, the lumen of the female urethra may be enlarged without committing any harm to that organ. The male urethra will certainly not much differ in that respect from the female one.

The operation of Allarton, we are informed, originated from a method known under the appellations: "*Methodus cum apparatu magno*," which was invented in the year 1520 by a surgeon of Cremona, Italy, *John de Romani*, who communicated it to one *Mariano Santo di Berletta*, since which time it became known under his name *Mariano's operation*. It became obsolete, but was revived, though greatly modified, by Allarton, and like Bigelow's method of lithotripsy, became a totally different operation from that of Mariano's. While the latter operated *on the left side of the raphe*, not sparing the neck of the bladder, and making use of a multitude of superfluous and odd instruments, which gave the method the name, "*cum apparatu magno*," Allarton operated exactly *in the raphe*, opening only the membranous portion of the urethra with the knife, and dilating the balance of the channel with the finger. The instruments were but a few, mainly a sound, scalpel and and forceps. While there existed many objections against Mariano's method, in consequence of which it was most properly relinquished, the method of Allarton, which is still often and very improperly mingled with Mariano's, by its virtues deserves well the ascendency assigned to it. Its reintroduction into Germany belongs foremost to that illustrious surgeon R. Volkmann, of Halle, Prussia, one of whose last statements, in reference to that operation was "that during the year he operated in the average on eight cases of calculus," and that "*there had to be most extraordinary circumstances, if he should select another method than Allarton's.*" In order to give a thorough discription of Allarton's methods, I have selected here a typical case.

Pærineal median Urethrotomy Allarton's.—The subject of this operation was G. Cook, 22 years of age, a native of this city and of German extraction. He measured 5 feet 4 inches in height, weighed 117 pounds, with a skin of fair complexion and light brown hair. He had been, according to the statement of his mother, a sickly child and was once reduced to a mere skeleton. His mother had given up hope ever to raise him. When 4 years old his urine became "bloody" with "sandy deposits," which condition lasted with few intermissions nearly two years. The boy often suffered a great deal of pain. All of these symptoms disappeared when 6 years old. From that time, against all expectation, the boy grew strong and healthy. With the beginning of the year 1878, when 20 years old, the symptoms characteristic of the presence of stone in the bladder set in. According to his own statement he was ex-

amined by several physicians, yet all but one had failed to make the correct diagnosis of his ailment. I first saw and examined him in 1880, discovering a calculus of about the size of a ripe walnut. I proposed to him the operation, to which he gave his assent.

From the history just given it was more than probable that the calculus was originally renal and having arrived in the bladder became fastened in a diverticle, where it remained growing till the attained weight caused its displacement. Out of its confinement, it became from that time, a troublesome lodger.

Previous to the appointed time for the operation I took proper care that the urine presented a distinct acid reaction. He drank some alkaline waters, citrate and tartrate of potassium, for several weeks. On the day of operation the presence of the calculus was once more established by the stone sound and bimanual exploration, in inserting the longest finger of the left hand in the previously cleaned rectum, while the right hand pressed against the abdomen. The diagnosis having been again corroborated and the size of the calculus once more explored, I met with no prohibitory cause for performing Allarton's method, as originally intended. It may be as well to state here, that previous to deciding upon this operation the urethra ought to be well examined if no obstacles exist to prevent a proper and sufficient dilatation of that channel, which if existing, have of course, first to be removed before the operation can be undertaken.

On the morning of the 30th of October, after the patient's bowels had been moved by a cathartic on the day previous, and again one hour before the operation by enemas, he was narcotized with chloroform by Dr. Schmidthe. When fully under its influence the patient was placed on a table in the known position for cystotomy. With the lower extremities bent at the kneejoints, the hands kept tied to the feet and his *posteriora* brought close to the edge of the operating table, projecting rather a little beyond it, I took the surgeon's perilous position between his legs. I say "perilous" in having learned from former operations of that kind, that no reliance is to be placed in any security against involuntary discharges of the bowels, though they may have been thoroughly cleansed previously.—Such *involuntarii alvi secessus* I have also observed to happen, notwithstanding the same precaution in splitting fistulae in ano.—The precaution I had taken against such an accident proved to be a wise one. The pærineum after being shaved, was cleaned with alcohol vini, followed by washing the parts with phenol water of 3 per cent. The instruments had also been cleaned and were kept in phenol water of 5 per cent. like the new sponges which I here used exceptionally. My son William took a position to the right of the patient, holding the itinerarium, which I had introduced, steady in its place with his left hand, while with the right he kept the scrotum elevated against the symphysis pubis. Whilst the itinerarium was held exactly in the raphe of the pærineum I made the incision. The point of the scalpel was inserted in the raphe at the beginning of the pars bulbosa urethræ, cutting downwards in the raphe and ending about 12 mm. (½″) distant from the anal aperture. Having divided the cutis and the superficial fascia, the groove in the staff could be distinctly felt. In cutting down upon it the membranous portion of the urethra was laid open. A portion of the hæmorrhoidal veinal plexus was hereby cut, but the bleeding was trifling, and this was in fact the only blood lost in the operation. Not that I place any weight upon the loss of blood in operations, if not in excess. The present mania of saving every drop of blood in operations, I consider just as manifestly an error, as in former times blood letting was in a Sangrado fashion. The proceeding with the operation was therefore not even interfered with momentarily. The cut in the urethra measured nearly three ctm. in length. The prostate, which I had explored previous to the beginning of the operation, was not touched by the knife, and the knife was abandoned for the balance of the operation after the urethra had been laid open. In beginning to dilate the urethra towards the bladder, I made first use of a dressing forceps to initiate the dilatation before using the finger. Volkmann at this part of the operation recommends to remove the staff and replace it by a probe. I tried it, but soon found that the finger rather lost its direction, instead of being supported by the slender probe. I therefore reintroduced the staff. The single difficulty here met with consists in first entering the finger into the urethra, but introducing the dressing forceps closed, led by the grooved staff, and opening the branches of the forceps in different directions, that difficulty will soon be overcome and sufficient room be gained for entering the point of the index finger. Once thus started I soon succeeded by a rotatory motion of the finger to enter the bladder. Another support of accomplishing that maneuvre consists in placing one hand on the abdomen of the patient above the symphysis pubis, causing a moderate pressure towards the rotating index finger of the other hand in the urethra, whereby less difficulty is experienced, nor is the bladder pushed out of the way. On the contrary, the bladder is thus, so to say, stripped over the encountering finger like a glove. After the finger had once entered the bladder, the staff was removed for good. The dilatation of the urethra was gradually accomplished, when the well polished branches of the stone forceps were easily carried into the bladder.

The calculus was known to be of an uneven, rough surface, presenting many protuberances. Of these I fritted away a good many to decrease the diameter of the calculus in extracting it. I might as well have made use of the percuteur and crushed the stone, but I felt confident to extract it entire, without causing any laceration. After some ineffectual attempts in grasping the stone at its smallest diameter, I finally succeeded. The stone was extracted without any injury to the prostate, or laceration in the least of the urethra.

The calculus belonged to the so-called mulberry variety. Its two diameters measured 26 and 33 mm. The circumference of the branches of the forceps holding the calculus in its smallest diameter measured 88 mm. (3½″), while the circumference of the stone,

at its smallest part, presented 75 mm., and 89 mm. at its largest. Its weight was not quite half an ounce. These measurements may prove the degree of extension the urethra can suffer if slowly and carefully dilated. It is considerably greater than Otis has given as the normal circumference (as we will see hereafter).

After the removal of the calculus, the bladder was repeatedly well washed out with 3 per cent. phenol-water, and the wound kept covered by carbolized sponges, fastened by a T bandage. The sponges were daily exchanged, boiled and kept in 5 per cent. phenolwater till used.

After the bandage had been removed from hands and feet, patient was carried to bed and 1/6 grain of muriate of morphia given subcutaneously. He was still under the influence of the chloroform, of which about 4 ounces had been consumed.[1] At the evening visit I found patient perfectly serene, not having suffered any pain, nor even the common nausea from the chloroform.

On the next morning visit the wound looked well; no hardness or swelling, to any extent, was perceptible, nor had any bleeding happened. Though a good deal of micturition had set in, little urine passed through the wound that day. The urine was limpid, pulse 130, temperature 101° F., which condition lasted during the first three days, excepting the pulse, which diminished 10 beats on the second day. There was no fever at any time, and I assigned that phenomenal rise more to the action of the chloroform than to the operation or any of its consequences. On the third day pulse and temperature had become normal. After the second day the urine came away from the wound still in drops, which lasted during several days, when it ceased abruptly. On the morning of the fifth day I found the temperature increased to 103° F., and on examination became convinced that the aseptic treatment had become defective by the nurse's fault. The sponge at the wound was dry. This was immediately attended to, and on the seventh day, at the morning visit, the temperature was again normal, and remained so till the wound had totally healed. During all this time the patient had been in the best of humor. From the fifth day after the operation, most of the urine was discharged through its natural passage, and from the eighth day, all of it. Only when the bladder became overfilled did a few drops of urine pass through the narrowed opening. At the end of the second week the wound was filled up by granulations, and cicatrization began. The patient left his bed, and with the end of the third week the wound had totally healed.

I have been led to believe that an operation causing so little reaction, being free from any danger, in fact presenting so favorable results, ought to recommend itself to the proper regard and patronage of the surgical profession. I have no doubt of the pærineal median urethrotomy making friends wherever it will be once tried, and the eminent surgeon of Halle deserves praise for his zeal in having assisted so powerfully in the reintroduction of a method which, for so long and unjustly, had been consigned to the lumber-room.[1]

How singular, then, must it not appear to see Erichsen confound the two operations, that of Allarton with the obsolete method, Mariano? two operations which have nothing in common but the general field for operating—the pærineum; beyond this every element, every part of the operation differs. While Allarton, as already mentioned, selected the raphe, Mariano operated outside of it. Allarton opens only the pars membranacea of the urethra with the knife, dilating the balance up to the bladder in a gentle manner by the rotating finger, leaving thereby uninjured the vas deferens and the calliculum seminale. Here an operation which needs but a few instruments, while Mariano, on the other hand, operated with a most complicated instrumentarium purposely constructed for it, forcing open the wound *vi et armis*, tearing and lacerating the prostate and neck of the bladder, and injuring thereby the seminal vesicles; an operation suspected of causing sterility and followed by a high mortality; an issue totally unknown in Allarton's method. True, when Allarton about twenty years ago introduced his new median section, it recalled to mind Mariano's old obsolete operation of 300 or 400 years past; but that such could induce an Erichsen to remark that: "Allarton's method was a reintroduction of Sanctus Mariano's operation" and that it afforded him an illustration of "the mutability of professional practice," which made it appear that there was "a cycle of opinions of fashion in surgery, as in politics and philosophy," is more than I am able to decipher. If such material differences of two methods, as we have seen here, entitle an author to call one "the modified modern," the other "the old method," then one might as well count the Cæsarian section amongst the modern and fashionable forms of delivery.

Erichsen, in his latest edition of "*Science and Art of Surgery*," has proposed a modification of Allarton's method, but I doubt if he will thereby give more satisfaction and greater security, or render the procedure described above easier of execution. In his exchanging the curved staff for a rectangular one, with its lower end 2½ ctm. long, with which length the incision has to correspond, cutting upwards, with one finger in the rectum, to secure the latter against being wounded, I really see nothing to admire as an improvement, but rather what the Ger-

[1] It has become a principle with me, based upon an extensive experience, to prefer chloroform to ether; and never begin an operation before a deep narcosis has been obtained. I rather sacrifice some ounces of chloroform, of which I apply always the purest and dearest (made from hydrate of chloral raw), than risk the life of my patient by depriving him of a sufficient quantity of air inhaled with the chloroform vapors. The habit of using minimal quantities of chloroform, measured by drops, under a total, or near a total exclusion of the atmospheric air, which produces *asphyxia* instead of *anæsthesia*, is a practice which cannot be condemned too severely. I have administered chloroform over two thousand times, and used more than two hundred pints of that liquid, and never met with an accident produced by the chloroform, *which I had not been able to remedy by my method, in reversing the whole body of the patient* as soon as threatening symptoms happened, in a cessation of respiration and circulation setting in. Such happened five times during my thirty-four years of practice, and in no instance did the method fail me. The only author who has mentioned my method properly and experienced its efficiency was the late Prof C. Hueter, in his "Grundriss der Chirurgie Allg. Theil," page 470.

[1] That a method apparently so free from all danger may, nevertheless, end fatally, I witnessed this year. Though the operation itself had been performed in a bungling manner, it was the neglect of a properly-applied asepsis which caused pyæmia and death.

mans call "eine eselsbrücke"—an ass bridge. Besides in employing a finger at intervals in the rectum is not well compatible and in harmony with the idol of a perfect asepsis and a scrupulous cleanliness. And again, from fear of wounding the rectum to give the advice to cut away from it in an opposite direction, would but prove the utter unfitness of a surgeon who would commit such a blunder. Such a person had better select another occupation, exposing himself less to become wrecked in reputation.

The enlarged incision of the cutis and subcutaneous cellular tissue in the raphe beyond the necessary length, I prefer on account of enabling the surgeon afterwards to dilate the urethra easier and more extensively. Pushing out of the way the bladder whilst dilating the urethra with the rotating finger, which, singular to say, has given Erichsen cause for complaining, and in which he sees even a point of accusation against the method, is too trifling an obstacle for a practical operator and what, as I have shown, may be obviated in the most simple manner by pressing with the non-operating hand against the abdomen, by which the neck of the bladder will, so to say, be pushed over the rotating finger of the other hand, assisting thereby the surgeon considerably in accomplishing his object. It must indeed be a well fortified method against which no more serious and graver objections than such trifles can be brought, to demolish it or bring it into discredit.

It is astonishing how easy and by taking time, to what an extent the urethra can be dilated after a beginning has once been effected. We meet with the same capacity in the female urethra, the uterus and the rectum, into which latter, with care, the whole hand and even part of the arm may gradually be introduced without producing a laceration, or, subsequently, a paralysis. The important condition of the urine, its innocence, if of an acid reaction, and the noxious influence on the other hand, if of an alkaline nature (which we will hear of later) and which ought always to be taken in consideration before deciding on a traumatic operation comprising the urinary tract, seems also to have been ignored by Erichsen. How much ignorance or oversight in that respect has had to do in judging the comparative value of one or the other method, who can tell?

The pærineal median urethrotomy, then, compares no doubt favorably with all the other methods of operation for stone in the bladder. The apparently small room the urethra offers for manipulating and extracting stones may to the inexperienced be an apriori justifiable objection against the method, and the surgeon who has never experienced to what a degree that channel can be dilated, will hardly believe that most of the stones removable by the lateral section, without crushing, can also be extracted by the pærineal median urethrotomy. Its disadvantages, if there are any, compared with the advantages are of a minimal character. The small wound, the trifling loss of blood, security in the knife's direction without any danger of wounding neighboring organs, and the short time necessary for a final recovery of those operated upon are almost unknown as an ensemble in any other method. How much advanced and improved, however, the operation of lithotripsy may have become of late, in complications with those fearful conditions cystitis and pyelonephritis, Allarton's method with its effective after treatment will occupy the front rank in the operation for stone. In few surgical operations has the human ingenium so well succeeded in obtaining its object and in delivering the human race from one of the most loathsome diseases to an extent almost beyond further improvement. In the face of this assertion then, vindicated by incontrovertible fact, it must appear strange to come across so singular and retrograde a proposition as the median operation has experienced in Berlin, Prussia. Instead of operating in the raphe as in Allarton's, the old obsolete Mariano's method, selecting the left triangular space near the raphe, has again been chosen. The only reason those surgeons have advanced for this poor innovation consists, that in case of too large a calculus, in order to win further room for the stone's extraction the lateral section might be added. That this modification has all the disadvantages and dangers of the properly relinquished method of Mariano, need not be further demonstrated. Why in such a case of too large a calculus a resort is not taken to the percuteur, or, even an extension of the incision towards the neck of the bladder in the direction of the raphe, is more than I am able to comprehend. The innovation is, to say the least, little creditable to its author.

To neutralize the bad impression the Berlin proposition must have caused, I will place here a practicable hint relating to the initial steps of Allarton's method, introduced by the late Dr. Wilms, of Berlin. He brought a kind of forceps, with two smooth branches, into the urethral orifice, and when arrived at the *pars nuda urethræ*, the instrument is partially opened, and between its two branches the incision perfected, dividing the parts to be cut all at once, and with perfect security. The ever-practical Wilms recommended the instrument highly.

After this exhaustive description and analysis of Allarton's urethrotomy in favor of the uninitiated, it is left to me to speak of its combination with lithotripsy, to which I have applied the name

Urethro-lithotripsy—Urethotomia-lithotriptica.—In returning here once more to the operation of lithotripsy, such has been caused by reflecting on some historical points concerning that operation, by Dr. Ed. Keyes, of the Bellevue Hospital, in New York. That author, in a studiously collected history of the operation of lithotripsy, tells us that attention to that operation had first been incited by the success of Civiale in France in 1824, and whom Keyes calls "the Fulton of lithotripsy." The successive sittings of crushing the stone did not last longer, as stated, than three minutes, after several days' rest. In a pamphlet written by Civiale in 1847, he claimed, of sixty-nine cases operated upon by himself, to have suffered only three deaths. But we have learned what to think of Civiale's statistics, which become the more suspicious here when we are made acquainted with the length of time the fragments were left in the

bladder; considering, moreover, the inadequate and deficient instruments used at that time, not to speak of the unknown action of the urine in complicated cases, nor of the known insalubrity of the Parisian hospitals. Next to Civiale, the French had two more distinguished lithotriptists at that early time—Leroy d'Etiolles (1846) and Heurteloup. The first asserted to have operated over 100 cases with success. Rapid operating, with immediate extraction of the detritus, had already, at that early time, become the *beau ideal* of that method. The bickerings amongst the surgeons at that period were so great "that it may be considered a wonder," says Keyes, "that lithotripsy ever succeeded in becoming established as a justifiable surgical procedure." That state of affairs gives us also a hint what to think of the published statistics at that period. It was Heurteloup who introduced the method into England (London). And in London he also published some of his writings (1831). Heurteloup, singular to say, stated it to be unnecessary to remove all the detritus, and that after the removal of the coarser particles, what was left would dissolve in the urine (!) Indeed, a strange idea, which Keyes properly characterizes as "an arrant heresy to damn lithotripsy at its birth." But when Keyes further adds: "It being clear that rapid lithotripsy, as performed by Amussat, Leroy d'Etiolles, and others, had been an unsurgical procedure, which could not stand the test of experience in the hands of the general surgeon," he evidently unwillingly committed another and not a smaller heresy, notwithstanding that rapid lithotripsy disappeared to a great extent, and "even Heurteloup had given it up at the end of his career." I am at least at a loss to conceive why men like an Amussat or Leroy d'Etiolles should have insisted upon the early removal of the fragments, if they had not had an adequate reason for it; nor can I comprehend upon what motive Keyes condemns that procedure, since, under an entire absence of all antiseptics at that time, the total and rapid removal of all the detritus could only have vouchsafed a successful result. And most so would it have been afforded in complicated cases, as with cystitis, even when the pain caused by the fragments should not have called for it. To no other action, at least, could I attribute the good results, provided such had in verity been obtained.

That even at the present time a wrong conception exists among the majority of surgeons about the real injurious influence of the fragments of stone, may be proved by the neglect of insisting upon its early removal and a thorough and repeated washing out of the bladder with antiseptic liquids which will be demonstrated in the following:

Keyes' paper informs us further "that in London at the time of Heurteloup's arrival scattered accounts of rude operations of lithotripsy had existed; but that it finally had gained the sturdy advocacy of H. Thompson, who had become its apostle and recognized authority." "That Thompson had declared it the *exclusive* operative procedure in *small stones*. That the best English surgeons at that time had been in favor of lithotomy, reserving for lithotripsy only such stones which might have been removed in a few sittings, and when the bladder could have been promptly freed from the detritus." "Matters had stood about at the same level in this country. Lithotripsy had had but few serious supporters. But a new departure had taken place since Bigelow's litholopaxy had gained favor here as well as in England under Thompson's leadership, and which had forced lithotomy into a position of minor importance."

"Entire fragmentation of the stone," says Keyes, "with immediate and total removal of the débris by aspiration through a tube passed by the whole of the urethra is the proper definition of *litholopaxy*. But that Bigelow disregarded the length of the time employed in the operation so long as the patient's general condition was as good as he desired."

"There is nothing new under the sun" the rabbi Ben Akiba once remarked. To detract from Bigelow's reputation, so that he should not pride himself of his well-earned triumph unimpaired and uncurtailed, Keyes tells us, an Englishman had been brought upon the boards, claiming for himself the priority of the principles advocated by Bigelow. Stokes, of Dublin, in December, 1879, stated before the Surgical Society of Ireland, that Bigelow's operation had already been performed in the Meath Hospital, in 1845, by Sir Philip Crampton. Stokes, in presenting even the original instrument, claimed that the principle of its action was the same as Bigelow's. Keyes well remarks here: "that it ought not to be forgotten that Sir Crampton's instrument had been used for an atonic bladder and not for a healthy one; besides there had been already surgeons like Carney, Mercier and others who even before Crampton had used similar instruments. Mercier's instrument had even the same rubber bulb and a similar glass receiver as Bigelow's, but all these were used for other purposes than Bigelow's.

After this short historical and interesting sketch, I turn again to the combined operations of urethrotomy and lithotripsy. The operation may also be called an infringement, since the urethrotomy is Allarton's and lithotripsy its inventor's. But while both methods separately are mainly recommended for comparative small stones, I, on the contrary, claim its application exclusively for the largest and hardest calculi, whilst for the small and middle sized ones Allarton's method ought to be the favored one almost exclusively.

After the exhaustive description of Allarton's operation—yes, what has been said of both operations—there is no need of further explanation. The name represents that sufficiently. Nevertheless, as will be observed, there are some particular points still to be argued here which may not be bare of all interest. The advantages of the combination of both operations are obvious. The crushing instruments, the lithotriptor or percuteur, can be built in a far more solid manner than when it has to pass the whole urethral channel, in consequence of which much larger and harder stones could be crushed than such as would be obtainable with the lighter constructed instruments, even Bigelow's not excepted. Next to the crushing of the stone, the removal of the de-

tritus can also be accomplished more completely and in a much shorter space of time, since those fragments need not be brought into so fine a dust as necessary to enter the eyes of the catheter. In the removal of the detritus, a common small glass or metal tube and a syringe will answer for Bigelow's sound with aspirator. The complete evacuation of the bladder from the débris of the crushed stone in the smallest compass of time, is evidently preferable to short crushings at longer intervals, as in Bigelow's method, where from 5 to 16 grains of the débris for every minute in an acid urine, and 2½ grains in an alkaline urine, and in the presence of phosphatic stones, from 40 to 70 grains only might be washed out. (Of this method more will be said hereafter.)

Further, the repeated entering and dragging out of the instruments through the whole sensitive urethra will be avoided. Strictures of the urethra, so great an impediment in lithotripsy, do hardly come in question here. The same is the case with prostatic troubles, which in a great part are easily removable.

The instruments which render Bigelow's method so expensive become totally superfluous. A much stronger built, simple lithotriptor, with a common syringe or irrigator, a scalpel and dressing forceps, are, as already stated, nearly all the instruments necessary in performing the operation. And what will not finally be the benefit derived from it in a case complicated with cystitis?

In an alkaline or decomposed, putrid, purulent urine, the preparatory treatment previous to the operation ought to consist during a few days in a milk diet, rest in bed, and drinking freely of some Lithia or Bethesda water (about three or four pints daily), and some alkaline diuretics, as citrate or tartrate of potassa. Repeated irrigations of the bladder of a 2½ to 3 per cent. phenol water, or of a solution of borate of potassa with salicylic acid, as warm as tolerated, are besides to be applied daily. Should there be a great difficulty in getting rid of the bad urine, an injection of a concentrated solution of nitrate of silver will often accomplish the desired object. With regard to the after treatment, I have only to call attention to the careful searching, that no fragments are left hehind. Repeated irrigations of 3 per cent. phenol water during day and night every fifteen minutes, may under circumstances save a life which already had been given up for lost.

No instruments ought to be used if not previously well cleansed and made aseptic by placing them for half an hour in a 5 per cent. phenol water, and to be greased afterwards with phenol-oil (one part phenol to two parts of oil, or glycerine). Immediately after each operation, the bladder must be well irrigated with the 3 per cent. phenol water.

Dangerous Character of the Detritus.—On several occasions I have called attention to the ill-judged and absurd opinions of the action of the fragments of the crushed stone. In order to present exhaustively the whole importance of that detritus and its proper understanding, inclusive treatment, I have selected here a typical case for demonstration. Though I could have selected a similar case out of my own experience, I have preferred to take one from the collection of my friend, the late Professor of Surgery, of Greifswald, Prussia, Dr. C. Hueter. We will observe the injurious process, or function, of the fragments explained in quite a different manner than usually considered where a great stress is laid upon the mechanical action of the sharp edges of the detritus.

It is by the mistakes, the errors committed, that we learn how to avoid them in future, and one such case, in which we have blundered, is often more instructive and of import than a hundred others of a successful issue.

The case under consideration was an inmate of the University Hospital of Greifswald, and Hueter lost his patient on the fourth day after the introduction of the lithotriptor. Hueter had at first caught the calculus more in order to measure its size at that time, than intending to crush it. But having caught it, as he thought, in a very favorable position for crushing, he thought to try at least the stone's hardness. Experienced and expert an operator as Hueter was, by that statement he points to one of the difficulties of that operation, since not every one is a Sir Thompson, who performs the whole operation in six or seven minutes! Having satisfied himself that the calculus was not a fit one for further lithotriptic efforts he therefore concluded to perform cystotomy in a day or two later. But being recalled a few hours afterwards, Hueter met the man suffering from a severe chill followed by a high fever, and a few days later the patient died under the symptoms of pneumonia. The post-mortem examination revealed instead of one, five oval calculi, of from 2–3 ctm. in the shorter and 3–4 ctm. in the larger diameter. They were of a whitish color and very hard, consisting of urates to the greater part, and were lying close together as eggs in a bird's nest. At the fundus of the bladder was a hæmorrhagic inflammatory spot of the mucous membrane with diphtheritic streaks, covering the upper part of the folds of the mucous membrane. The membrane lining also the ureters and kidneys was equally very hyperæmic. Signs of a fresh pneumonia were besides visible. Of the calculus, which had been caught by the instrument, a mere indentation was to be observed, and only a few small particles from the external surface of the calculus had come away. Not the least injury on the mucous membrane could be detected. Hueter thought that, few as the lost particles from the cortical substance of the calculus ever were, they might have been the cause of trouble, they were at least sufficient to account for the observed successive phenomena. Hueter's hypothesis was "that in the formation of the calculus some *irritaments* (micro-organisms) causing inflammation, had become imbedded, which being set free by the lithotriptic effort and coming in contact with the mucous membrane, had caused a cystitis, aggravated by a diphtheritic form." This of course is but an hypothesis; yet if we admit that a catarrh may be caused by a decomposition of the urine, then also no objection can be raised against the including of some of the products of this decomposed urine into the lamellated structure of the calculus. This hypothesis of the validity almost of a theory, seems to be even

more reasonable than the admittance of an injurious action of such fragments, as we have here to deal with of so diminutive a character as scarcely to cause a mechanical action, notwithstanding that such is generally admitted to be the case with the detritus. That groups of micrococci, included during the formation of a calculus, may when set free, act on the mucous membrane and cause inflammation, such seems to me, as it ought to every surgeon, a more reasonable supposition than the common one of admitting mechanical injuries produced by such small fragments as were here present. The case in question besides permits scarcely of any other interpretation than the one given here, and if correct, which can hardly be doubted, it will require as an important element, an aseptic, or antiseptic treatment in every lithotriptic operation.

If such micrococci should be propagated in a high degree, a diphtheritic inflammation of the mucous membrane might be produced, which could even be transferred to the mucous tract of the urethra and the kidneys.

The pneumonia, in Hueter's case, was of course the expressed manifestation of the general diphtheritic infection of the organism. I repeat then, if in the absence of all sharp fragments, as in this case, such few trifling particles could have produced such tremendous effects, then we will have to declare our incompetence, since such small particles will almost always be retained in every such operation, though they may and fortunately do not each time cause an inflammation of such an intense character. What we may therefore learn from that important case, consists in a total change of the character of action of the fragments and in the necessity of an immediate and thorough antiseptic irrigation of the bladder after each lithotriptic act.

That in the case alluded to, in which I had for the first time introduced a lithotriptor through the whole of the urethral tract, and more for experimentation's sake to try the hardness of the calculus, that I met with a more favorable issue, I had to thank for the information I had received from Hueter's case. An immediate recourse to antiseptic phenol injections into the bladder every half hour, during one day and night, till the high fever subsided, saved my patient's life.

Hueter thought, "that he should have performed lithotomy" in his case and as early as possible, the presence of the violent cystitis to the contrary, notwithstanding.

I fully concur with this celebrated surgeon's views, with the exception, that instead of the lateral section, I would, in having performed urethro-lithotripsy, rather extend the incision in the raphe towards and into the neck of the bladder if necessary.

"The knife in such a case," says Hueter, "acts as an antipyretic, as in the incision of a septic phlegmon, or, in the resection of a putrefying joint. With an incision into the bladder not only the extraction of the calculi would have followed forthwith, and with them the removal of the cause of the diphtheritic process of the bladder, but also the removal of the inflammation itself by the antiseptic irrigation. Yet at that time the justification of performing 'lithotomy' in a patient with acute high fever and beginning pneumonia, did not exist, and many surgeons would shrink from performing it under such circumstances, even at the present day, justifiable, if not indicated as life-saving, as the operation may ever be."

It happened to Hueter's patient, what so frequently happened during the late Franco-German war, with shot wounds comprising the joints. In waiting, according to the old school, the antique customary rules for the abatement of the high fever, before undertaking the operation, it happened that the patient usually died in consequence of waiting, and the time for the operation, as a matter of course, never arrived. That during the stormy suppurative inflammation of the wounded joint an early operation, the resection of the joint, for instance, would have been indicated as life-saving. Such the old fogies neither contemplated nor comprehended. Hueter in such cases operated; he resected and saved the life of his patients, whilst the lives in the hands of the opportunists were wantonly sacrificed by the hundreds.

Here, then, is progress—progress in cystotomy on an extended urethrotomy, Mr. Erichsen's negation to the contrary, notwithstanding!

Lithotripsy no doubt has suffered during a long period from different mishaps, but even Bigelow misconstrued, in part, if not in the main, the real source of those failures, at least theoretically. If he had recognized the real character of the obnoxious fragments, it is more than doubtful that he ever would have fallen upon the construction of his costly apparatus for the sole object of the speedy removal of the detritus. Not less so is the crafty Sir H. Thompson, England's most distinguished stone-cutter, caught on marshy bottom, if he still claims for lithotripsy the attribute "*the future operation for stone in the bladder.*"

The rule, during the presence of a heavy catarrh of the bladder, not to undertake lithotripsy or cystotomy, on account of the danger associated with it, is therefore a maxim for serious consideration.

The oxalate and uric calculi present in a bladder, though free from a catarrhal affection, are, on account of hardness, difficult, if not impossible, to be crushed with the ordinary instruments. They will permit the operation of urethro-lithotripsy, by permitting stronger-built instruments. Calculi composed of triple-phosphates, though easily crushed, are almost exclusively present in a catarrhal-diseased bladder. Thus would the simple operation of lithotripsy have been narrowed down to but a few cases, if Bigelow had not, by his apparatus and the speedy and total removal of the detritus, again enlarged the lithotriptic field. But even without his costly and complicated instruments, in the presence even of a cystitis or a decomposed alkaline urine, there would not any longer exist contra-indications for either crushing or cutting operations, under a thorough, methodical antiseptic irrigation of the bladder at and after each session, wherewith all and every irritation of the bladder, and danger, would cease.

With all due reverence, then, for the inventive

ingenium of our gifted and skillful confreré for the construction of an apparatus so long a desideratum in the operation of lithotripsy; still, with the proper and correct recognition of the true character and nature of the mischievous consequences of the rudiments of the crushed calculus, we might nevertheless do without his apparatus and be content with most of the old instruments. Such, to a certain extent, must most assuredly be a consolation to many a colleague in straightened circumstances, unable to suffer the expenses for Bigelow's litholopactic operation.

In order to corroborate the correctness of what has repeatedly been stated here, I could, if needed, bring further historical proofs, not leaving the shadow of a doubt of the valuable, important and indispensable antisepsis in lithotriptic, cystotomic, urethrotomic or urethro-lithotriptic operations, no matter if under aggravated or common circumstances. When a case, for instance, recovered, suffering a catarrh of the bladder and an ammoniacal fermenting putrid urine, containing pus and blood corpuscles, and in addition suffering the presence of a stone, constituting a condition where neither lithotripsy, nor cystotomy, nor any other operation could promise much to save the life of the man, but where lithotripsy had nevertheless been chosen and the man finally recovered, there is certainly reason to inquire about the adopted treatment, and that the more so, when a long series of sessions followed each other, each equally successful; and when under that treatment the urine had finally become clear and normal. Need I tell it, that here only the persevering, careful methodical irrigation and washing out of the bladder after each session with an 8 per cent. phenol water saved the man's life. The exclusive use of these irrigations with 2 or 3 per cent. phenol water and similar wet dressings accompanied with an unfailing success, may therefore be taken as a guaranty for their propriety, whatever may be said to the contrary by others. Hueter, in defending equally the wet phenol dressings, was far from ignoring the importance, if not the preference, of Lister's dry protective bandage, as in general the better, still he remarks: "Should chemistry give us another and less volatile material than the phenol, less interfering with the circulation and less toxic, but equally antiseptic in its effects, it might still happen that Lister's protective with all the other costly paraphernalia of his present dressings might wander into the lumber room." To which I would like to add: That such a material we have probably obtained, if not by a chemist, by at least an equally scientific man, who of late has enriched our knowledge in the field of pathology to no small extent, the distinguished discoverer of the bacillus tuberculosis and the comma bacillus of cholera, R. Koch, of Berlin, Prussia. And that antiseptic material is the bichloride of mercury, commonly named corrosive sublimate. In a solution of one in a thousand parts of water, it destroys, after Koch's statement, every known bacterium, while in one to five thousand the propagation, even of these micro-organisms, cease. My experience with that per-antiseptic remedy is yet too limited of forming an opinion of its efficacy, though I have used it almost exclusively of late, retaining the phenol only for the spray, and disinfecting the instruments with a 5 per cent. solution. What so far I have experienced with the sublimate encourages, no doubt, to further trials.

Without a proper antiseptic for the protection of wounds, or, in a cystitis with its sequelæ, the urine may become such a dangerous poisonous substance, that even a serious diphtheritic inflammation may ensue, and according to Virchow, such a diphtheritic product caused by a septic urine will act, if introduced in a skin wound of a rabbit, just as poisonous as a diphtheritic membrane taken from the fauces of a diphtheritic person.

"For irrigation of the bladder and the urethral tract a 2 per cent. or 3 per cent. phenol solution cannot be replaced at present in regard to its efficiency," says Hueter, "with any other known remedy."

I will close this important chapter with another case the same author has further given us to illustrate its importance, though I believe that sufficient proofs have already been advanced to overcome every doubt which might still be harbored. The case was one of lithiasis, with strictures of the urethra. The urine was in such a state of decomposition as to render its stench unbearable. The mucous membrane of the bladder was found covered with incrustations; its interior was rough, and in trying to remove some of those incrustations an extensive bleeding set in. Hueter had witnessed the operation on two of such cases by noted surgeons, and both cases had died, one from gangrene of the bladder, a short time after the operation. Hueter, in his case, performed external urethrotomy, and caused a strong current of 3 per cent. phenol water to pass through the bladder and urethral opening during a quarter of an hour. He applied a silver drain, a finger thick, and antiseptic wet dressings. *Every three hours at day and at night, the bladder was well irrigated during a quarter of an hour each time.* Not the least irritation set in, and the man's life was finally saved.

I could add two more cases out of my own experience and practice. In both I had performed external urethrotomy (Boutonniére). Both lives were saved under the close attention and constant antiseptic treatment. Under the application of the silver drainage tube, the urethral fistules healed (one had two, the other three). This may finish the chapter of lithotripsy and urethro-lithotripsy. The importance of the subject, the necessity to particularize, where so much depends upon a minute and exact performance to be successful, since not all are masters of our art; and finally, the opposition and doubts with which many of the ideas here advocated will still be considered, made it obligatory with me to particularize and support the theories with incontrovertible facts. I have but one hope, and that consists in—to have succeeded.

In the next chapter I intend to let the diverse methods of "the operation for stone" pass review, but treat them, with one or two exceptions, in a more cursory manner, adding such remarks as I deem of import and of a more general interest.

(TO BE CONTINUED.)

A CASE OF SYMPATHETIC NEURO-RETINITIS WITH CONSECUTIVE SEROUS IRITIS.

BY S. D. RISLEY, A.M., M.D., ASSISTANT OPTHALMIC SURGEON HOSPITAL UNIVERSITY OF PENNSYLVANIA.

Read before the Ophthalmic Section of the American Medical Association.

The so-called sympathetic diseases of the eye still hold a first place in the interest of ophthalmic surgeons, not only because of their intrinsic importance, but also because of the doubt which still hangs over their pathogeny. It is not my present purpose to attempt a full discussion of the important questions involved in the study of these affections of the hitherto sound eye, clinically related to pathological processes in the injured eye; but to relate briefly the history of a case which seems to call in question the correctness of the opinion which regards the consecutive affection as always of sympathetic origin.

Injury to Ciliary Region. Neuro-Retinitis in Uninjured Eye; Consecutive Serous Iritis.—John D., æt. 14. Dec. 26, 1882, was struck in the left eye by the arrow from a boy's gun. The propelling force was a rubber band, the projectile a wooden arrow, 1 cm. in diameter, 8½ cm. in length, tipped with a brass ferule, from which projected a metal point 1 cm. long and 3 mm. in diameter, with sharpened extremity. This metal extremity penetrated the eye at the corneo-sclerotic junction, in the lower and inner quadrant, making a horizontal wound nearly linear, part in ciliary region of sclera, partly in the cornea. The iris was found projecting from the wound, and behind it a grape-like mass, bluish-black, probably the ciliary body. Ineffectual effort was made by gentle manipulation, and pressure with lower eye-lid to replace the protruding mass. The projecting iris was incised, leaving a nearly typical coloboma of the iris. The ciliary body was then gently replaced within the wound by the horn spoon, when a button of vitreous presented in its stead. Atropia was instilled, the eye bandaged and subsequently treated as after a cataract extraction. The boy had suffered much shock from the injury. There was violent reaction which was, however, promptly and successfully met by local depletion and aconite.

The wound closed with cystoid scar, but the eye notwithstanding this rapidly lost its redness. On January 22d, less than one month from the receipt of the injury, he visited the office still wearing a Liebreich bandage. The following conditions were noted: O. S. still some ciliary injection, anterior chamber normal, wound flat, no adherence of iris or ciliary body, lower and inner periphery of lens opaque, blood clot still in vitreous chamber and prevents further ophthalmoscopic study. O. D. v. $=\frac{20}{xx}$ *fac.*[1] Jr., 1 p.p. 10 cm. eye white and ophthalmoscope revealed a typically healthy, young eye, with H. = 1, 5 D. On January 31, the patient was attacked with coryza attended with slight catarrh of the conjunctiva in the right eye, for which he was treated with a slightly astringent wash. The attack was attended and followed by some undue sensitiveness to light and inability to use the eye. On February 3, v. $=\frac{20}{xxv}$ and Jr. 1 p.p. 17 cm. Ophth. shows simply undue opacity of surface of optic disk. On February 13 the nerve end was as red as the surrounding choroid, and its margins blurred by the hazy retina; veins full and tortuous, no hemorrhages, media transparent, iris dilates *ad max.* under atropia; conjunctival and ciliary injection remains, and there is increased lachrymation and some dread of light. February 19, v. had sunk to $\frac{20}{xl}$ and the ophthalmoscopic symptoms had progressed. On the 26th, improvement is noted, while v. is not recorded, but media are distinctly noted as transparent. On March 2, only hazy view of the eye ground could be had, owing to diffuse opacity of the media, and there was seen with convex glass numerous dust-like particles in the anterior part of the vitreous body. The retina was striated, circulation as before, and there were now numerous yellowish-white splotches throughout the fundus, v. $\frac{20}{cxxvi.}$ Examination with 2″ lens shows a few punctate opacities on membrane of Descemet in its lower half. The potas. iod. and bromide which he had been taking steadily since the first appearance of the neuritis was continued and the mercurial bandage was prescribed in addition, with 4 gr. sol. of sulphate of atropia locally.

Under this treatment the eye slowly but steadily improved, until on the 18th of April v. rose to $\frac{20}{xx}$; ciliary injection gone and p.p. for Jr. 1 was 15 cm., the atropia solution having been suspended for ten days. On the 5th of May, it was noted: eye white, corneal deposits have disappeared, no retinal haze, margins of nerve fringed, retina striated above and below the nerve, considerable absorbtion of pigment epithelium throughout the entire eye ground.

On June 1, v. $\frac{20}{xx}$ +, p. p. Jr. 1, 13, cm. o. s. v. $\frac{20}{cc.}$ On Apr. 30, 1884, v. $\frac{20}{xx}$ fac. Is going to school; eyes are not troublesome. In o. s. counts fingers with difficulty. In o. oph. shows conus at outer side of nerve—and nerve itself grayish-green —margins fringed.

The points in this case which to the reporter seem of sufficient interest to justify its publication are, first, the complete recovery of the secondarily affected eye without the removal of the injured ball; second, the insidious onset of a descending optic neuritis, followed by choroiditis, cloudy vitreous, and finally all the phenomena of serous iritis. Had attention not been directed to the eye by the conjunctival catarrh attending on the coryza, it is probable that the conditions of the optic nerve and retina would have been entirely overlooked until the inflammation of the choroidal tract had so obscured the media as to prevent an accurate study of the retina and nerve.

NOTE.—Since the presentation of the above report the patient has had two attacks of convulsions, the first preceded by blindness. The convulsions were epileptiform, attended by complete unconsciousness and followed by violent headache. The first occurred in the latter part of June. The patient was seen in consultation with the family physician, Dr. O'Hara, of Philadelphia. The ophthalmoscope re-

[1] With facility.

vealed a fresh onset of the optic neuritis. The mercurial bandage was once more employed, and was again followed by a speedy subsidence of all the symptoms. The second attack occurred Nov. 1, 1884; was similar to the attack above described. The neuritis was once more well marked. The same treatment was once more advised, but the patient drifted into the hands of an irregular practitioner, probably in consequence of a dreaded enucleation of the injured eye.

MEDICAL PROGRESS.

MATERIA MEDICA AND THERAPEUTICS.

THE USE OF COCAINE IN THROAT AFFECTIONS.—As an additional proof of the wonderful effects of this drug which is exciting so much attention in this country, we give a brief of the paper read by Dr. Jelinek before the Society of Physicians of Vienna, and taken from the *Wiener Medicinische Wochenschrift* by the *Medical Times:*

Dr. Jelinek first briefly reviews the various methods hitherto employed to diminish the sensibility of the pharynx and larynx, viz., the painting with sulphate of morphia, the ether spray, tannin, bromide of potassium. The use of sulphate of morphia was very commonly used. The pharynx and larynx were painted twelve times with chloroform, and after the lapse of an hour an equal number of times with a concentrated solution of morphia. This was done in the evening preceding the day of operation. The next morning the sensibility of the larynx was found so diminished that operation could be performed without distress. The disadvantages of this method were obvious. The preparation lasted twelve hours, and the patient had to be watched during the whole night, as there was a possibility of narcotism. Hydrochlorate of cocaine seemed to have been long known to French physicians, but its practical employment as an anæsthetic and anodyne had hitherto been unknown. He used dilute alcoholic solutions of ten per cent. and twenty per cent., which were at first clear, but which after some days became turbid, owing to the alcohol evaporating, and some of the cocaine being precipitated. It then became necessary to add a few drops of alcohol. Hydrochloric acid should not be used in preparing the solution, and it should not be filtered. In slight operations, where little reflex action and only moderate pain were present, the ten per cent. solution sufficed; but where the larynx had to be rendered anæsthetic for more serious operations, the twenty per cent. solution must be employed. To the pharynx the solution should be applied by means of a little mop; to the larynx by means of a thick, soft camel's hair pencil. The application must be repeated every minute and a half, if necessary. The anæsthesia lasted ordinarily from ten to fifteen minutes, and disappeared totally after twenty minutes. All those parts with which an instrument might come into contact—the margin, the lingual and laryngeal surface of e epiglottis, the palleculæ, and so on, must be painted, as reflexes might occur whenever a part had remained untouched by the solution. He then mentioned some cases in which polypi and papillomata had been removed from the larynx with considerable success. As an anodyne in cases of tuberculous perichondritis, in which delutition was so painful that the patients refused food, and were in danger of perishing from inanition, it rendered good service; the diminution of pain sometimes lasted for three hours; it was necessary to seek out all the implicated spots, and to paint them thoroughly. In these cases only aqueous solutions had been used. He further pointed out that cocaine diminished the swelling of a mucous membrane where present, lessened its secretions, and, according to Fannel, tightened the vocal cords. No local or general disturbance had been observed after its employment.

In the course of his remarks Dr. Jelinek gave one striking case somewhat in detail of a man, 45 years of age, suffering from tubercle with extensive swelling and strong infiltration of the epiglottis, but only moderate dullness and slight crepitation were discoverable at the apex of the right lung. He affirmed that for close upon two months he had only been able to swallow milk in the minutest quantities. He was extremely wasted, incapable of work, scarcely even able to walk, and tortured by continuous pain and thirst. Before applying the cocaine solution Dr. Jelinek made him drink some water. He had hardly swallowed a few drops before he started up in the greatest pain, while the water returned through his mouth and nose. Dr. Jelinek then carefully painted the lingual and part of the laryngeal surface of the epiglottis, and the palleculæ, with a ten per cent. solution of cocaine, and a minute afterwards told the patient to drink again. The man anxiously took a small mouthful, for a moment looked around in astonishment, and then, to the surprise of all, greedily swallowed the whole glassful at a single draught. On reaching home he made an excellent meal (the first he had for two months), but soon after the pain re-appeared, and three hours later was as bad as ever.

Professor V. Schrötter stated that he had succeeded in preparing patients by this method, of preparation in from three to eight days, so that they became quite indifferent to endolarnygeal manipulations.

TANNATE INJECTIONS IN CHOLERA.—Professor Cantani, of Naples, has obtained excellent results by the early treatment of cholera with enemata of warm solutions of tannic acid. (*Centralblatt für die Medicinischen Wissenschaften. Med. Times.*) He used the solution in strength of 5 to 10 grammes of the acid to 2 m. of boiling water, with a little mucilage and laudanum. To insure success he generally made the injection as high up in the bowel as possible, but found that even with an ordinary syringe the treatment was valuable in the early stages of the disease. It was especially effective during the period of premonitory diarrhœa, which was at times completely checked even after a single injection, a period of rest following of from eight to ten hours, and further attacks being cut short in a similar way. The tan-

nate injections seemed to prevent the excessive loss of fluid by the bowel, to permit the continuance of the flow of urine and so to stave off the typhoid state and altogether to prevent the onset of the algid period. The exact mode of action of the tannic acid must remain as yet undetermined. Amongst other possibilities, Professor Cantani suggests that it has a directly destructive or abortive influence upon the comma bacilli. In furtherance of this view he made direct experiments upon artificially cultivated bacilli and found that, although not destroyed by the acid, the micro-organisms were checked in their reproduction and in their mobility for a period of from twenty-four to thirty-six hours.

Treatment of Marsh Fever by Subcutaneous Injections of Carbolic Acid.—Dr. Dieulafoy communicated to the *Société Medicale des Hôpitaux de Pâris* (*Lancet*), the history of a patient who since 1877 had had tertian fever three times, which had always been successfully treated by the administration of quinine. The fever having returned last June, the patient came under the care of Dr. Dieulafoy, who on the first day injected subcutaneously two centigrammes and a half of carbolic acid, dissolved in a hundred parts of water. The quantity was increased on the following day to five centigrammes, and to seven centigrammes on the days of apyrexia. Recovery was complete at the end of seventeen days. The patient had then absorbed eighty-four centigrammes of carbolic acid, without showing any signs of poisoning.

In the subsequent discussion Dr. Laveran reverted to the fact that carbolic acid injections had been employed against marsh fever so far back as 1869, with questionable success. He doubted the propriety of attempting to supplant so certain a remedy as sulphate of quinine. Dr. Huchard related the case of an Arab, in whom quotidian attacks of fever, which had resisted all other remedies, yielded to bromide of potassium.

SURGERY.

Skin Grafts from the Frog.—Dr. Wm. Allen (*Lancet*) finds that bits of skin from a decapitated frog make grafts which admirably answer all purposes, forming a source of supply always at hand in the country, except during the winter months, being easily applied on account of their uniformity in thickness, and necessitating no pain to suffering humanity. The skin of a single frog yields grafts for an enormous extent of surface and preserves its vitality so long that, if the patient is at a distance, the portion of skin required can be carried by the surgeon in his pocket for an hour or more without injury, provided it is wrapped up in gutta-percha, or other water-proof tissue, to prevent drying. As witnessed in three cases the frog grafts at first act as human grafts are known to do, but later on their behavior is different. Thus, soon after being applied they disappear, but after a short time they appear again as a thin transparent film on the surface of the granulations, some of the films being raised in the centre and depressed at the edges, forming small conical elevations. At this period the skin at the edge of the wound takes on a very rapid growth, but, curiously enough, the grafts themselves grow but little, and some stop growing altogether, this being so different from what occurs in the case of human skin grafts. If the wound or ulcer is a large one, the rapidity of epidermal growth at the circumference also soon diminishes, unless stimulated afresh by a second application of grafts, so that often a series of settings of grafts is needed before the granulations are closed over with skin. Material for graft-making, however, being so easily procurable, the large quantity of seedlings required offers no difficulty.

Dr. Allen applies to this process the views of Stricker regarding the existence of sexes in the tissues. The colonies of epithelial corpuscles at the edges of the ulcer remain quiescent through lack of one sexual element, which the grafts no sooner supply than reproduction rapidly sets in, fertilization being probably brought about through the medium of the fluid which bathes the surface of the granulations. If the sexual theory accounts for the process, the skin that grows after the application of the frog grafts must be of the nature of a new breed, a cross between human and frog epidermal elements. The disproportionate growth between the frog grafts themselves and the circumferential epithelium in no way invalidates this supposition, seeing that a somewhat analogous condition exists among animals when families of the same species are crossed with one another, fertility being greatest on the side that tends to degeneration, and less on the side that aims at a higher development.

On Rhinoliths.—Dr. E. Schmiegolow (*Nordiskt Mediciniskt Arkio*) gives the case of a rhinolith in a man 58 years of age who suffered for sixteen years from purulent and foetid discharge from the left nostril, complicated by a complete obstruction of that half of the nose. For five or six years every time that he became overheated, an abundant cold sweat manifested itself over the whole of the left side of the head. This phenomenon had disappeared for the last four years. The left cavity of the nose was filled by a hard body which, under the shape of a fork, surrounded the inferior turbinated bone. He was satisfied that he had a rhinolith to deal with, for it was not supposable that the bony tissues could furnish a sequestrum without some deformity, which did not exist. The stone was removed in two sittings by means of lithotripsy. It was composed of uniform layers without any nucleus, and contained but a small quantity of organic matters, among which not a trace of oxalic acid could be found. The inorganic matters formed the greater part of the stone, and they consisted principally of phosphate of lime, phosphate of magnesia, carbonate of lime in small quantity, and traces of chlorides. The rhinoliths are very rare, and only 20 cases are to be found in the literature of the subject. What adds to the interest of rhinoliths, after their great rarity, is the difficulty in diagnosticating them. A great number of these cases are treated for years as necroses of the bony tissues of

the nose, or as malignant tumors of the nasal cavity. The treatment consists in their extraction as a whole or after lithotripsy. If the stone is too large to be removed by a single operation, or too hard to allow of lithotripsy, it is necessary to detach the nose from its insertion to make more room.

NOTE BY THE COMPILER: M. Démarquay in 1845 published in the *Archives Générales de Méd.* a case of this character where several small calculi were passed; one, the size of a bean, on being sawn through was found to have a cherry stone for its nucleus. He could only collect 14 cases to compare with his own, several of which contained cherry stones as nuclei, and in some no nucleus was found. Among the symptoms, severe hemicrania was common. In one case the corresponding eye became seriously affected, and in another the tumor appeared to be connected with the roots of a cavious front tooth, as pulling on it caused movements of the tumor. In "A Collection of Remarkable Cases in Surgery," by Paul F. Eve, page 125, will be found a translation of Démarquay's article taken from the *Edinburgh Medical and Surgical Journal*, 1845.

MEDICINE.

THE RELATION OF CERTAIN DISEASES OF THE EYE TO GOUT.—Mr. Jonathan Hutchinson delivered the Bowman Lecture before the Ophthalmological Society of the United Kingdom, taking this subject for his text. The lecture in full and a resumé of its principal points are given in the *Medical Times*.

As his lecture was the first delivered, he devoted some space to insisting upon the existence of a clear distinction between gout and rheumatism, while admitting the difficulty, and even in some cases the impossibility, of actually drawing this distinction in practice. By *gout* he means all states of health which are, whether directly or remotely, connected with the accumulation of lithate of soda in the blood, as the result of over-feeding or defective assimilation. From the primitive idea of *rheumatism* he would exclude as causes all that have reference to food or assimilation, and would count only those which regard climate and weather, and especially exposure to cold and damp. Now, the primitive type of each of these diseases becomes much modified by inheritance, *e. g.*, a form of transmitted gout may exist, not associated in the patient with either lithiasis or lithæmia. Again, the primitive type of the one disease may be associated with an inherited form of the same disease or of the other, while an inherited form of both may co-exist in the same individual. The intricacy of the investigation is, therefore, manifest, and becomes almost hopelessly so when we are told that strictly rheumatic disorders, even to rheumatism itself, if it happens in the relatives of those who have had gout, lends support to the theory of family tendency to gout. It is an observation confirmed by daily experience that the children of the gouty are more liable than others to attacks of rheumatic fever. He gives to each hereditary diathesis the definition of arthritic susceptibility to food in the case of gout, and arthritic susceptibility to weather in the case of rheumatism. There is a liability to the modification of tissues in the subject of acquired gout, and a proneness of these tissues to suffer in a peculiar manner when exposed to the ordinary exciting causes of disease. The offspring of such a person inherits his tissues, and his tendencies as regards digestion, etc., and therefore has an increased proclivity to typical gout if exposed to its usual causes. But, besides this, he inherits, independently of exciting causes, a liability to forms of inflammation or of degraded nutrition, which are not unequivocal gout, but which are yet the direct consequence of it in predecessors.

"Hot eye" Mr. Hutchinson associates with quiet or suppressed gout. This affection is characterized by repeated short attacks of conjunctival congestion, and a feeling of heat and pricking in the eyeballs, and is liable to occur after taking injudicious diet. In connection with this affection there also occasionally occurs sharp shooting pain in the eyeballs in persons suffering from unequivocal gout. He next calls attention to a form of asthenopia, occurring in young persons, in association with inherited gout. Nearly all cases of arthritic iritis are really due to gout, either alone or in association with rheumatism. It is decidedly exceptional for rheumatism, pure and uncomplicated, to show any tendency to attack the tissues of the eye. In considering the different types of arthritic iritis, he takes, first, the ordinary recurrent form, frequently called rheumatic iritis, which occurs in acute transitory paroxysms of well-known type. A considerable number of such cases occur in the subjects of true gout, but in a much larger number of cases the concomitant symptoms are those of rheumatic arthritis and not of true gout. This form of rheumatic gout is, in reality, a hybrid disease, possessing, in addition to an unquestionable share of rheumatism, an admixture also of gout tendency. This view is supported by its infrequency in women, and by the age, habit of body and mode of life of those usually its subjects. While iritis in association with acute or chronic rheumatism is very rare, it often accompanies the rheumatic affections induced by gonorrhœa, which occurs usually in the subjects of inherited gout. He describes a true gouty iritis with cases in which is a peculiar form of destructive iritis always associated with the inheritance of a gouty constitution. In favor of *relapsing cyclitis* being of a gouty origin, facts are still wanting. "It is very probable that, in some cases, the constitutional cause may be gout." Little evidence can be produced in argument to show that gout does produce neuritis, but that gouty sciatica may be produced by an inflammation of the nerve or its sheath is at least plausible; and if so, it is also possible that some forms of optic neuritis may really be due to gouty inflammation. Mr. Hutchinson considers that *retinitis hæmorrhagica* is very rarely seen excepting in those who are themselves gouty.

He divides the different gouty eye affections into two groups, according as they are associated, with (1) acquired, or (2) inherited gout. In the former group the attacks are generally acute, transitory and painful, and the patients are adults; here he places hot eye, sclerotitis, recurrent iritis and retinitis hæmorrhagica. In the second group the attacks are prone to be chronic and persistent, often insidious, and usually destructive; here we find the true gouty iritis, relapsing cyclitis, and certain forms of soft cataract. Indications as to treatment are afforded by the nature of the gout in the two groups.

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THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JANUARY 10, 1885.

ATHEROMA OF THE CORONARY ARTERIES.—The term atheroma as applied to chronic deforming endarteritis is objectionable, since it does not fully express the condition. Virchow thinks it should be limited to a fatty degeneration of the middle coat. English writers largely employ the term to cover the whole process, whether the change be fatty or calcarious. It is likewise so firmly implanted in the vocabulary of American medicine, that to attempt to uproot it seems hopeless; hence we conform to usage, while at the same protesting against the term. Although having been observed, as a matter of great rarity, in youth and even in young children, atheroma is essentially a senile change. German pathologists express themselves rather guardedly as to its etiology, aside from age and strain, while English writers, notably Bramwell, in his recent admirable work on *diseases of the heart and aorta*, look upon syphilis, gout, rheumatism, chronic alcoholism and strain as important factors in its causation. Fothergill (*The Heart and its Diseases.* Second edition, page 436) says: "The general high blood-pressure in the arteries in the cardio-vascular changes described in the preceding chapter, is the great cause of atheromatous change in the arteries." However this may be, atheromatous change of the arteries is probably more prevalent than most practitioners realize. It is said to affect most frequently the aorta and its larger branches, the arteries of the head, the coronary arteries, the splenic, and those of the extremities. As a result of atheroma, the smaller vessels become inelastic and not infrequently impervious to the passage of the blood, and the consideration of this fact will enable one to appreciate how serious may be the consequences in the case of the general and coronary arteries.

The anatomical character of this disease, as manifested in the nutrient arteries of the heart, and the serious changes in the cardiac muscle which result therefrom, have been forcibly described by Prof. Leyden, of Berlin, in Zeitschr. f. Klin. Med. vii., s. 459-539. Such is the importance of the subject, that we give the following abstract:

"The results of experimental occlusion of the coronary arteries have not been uniform; sometimes the slowing and weakening of the heart's contractions are gradual, blood pressure falls, *pari passu*, in the systematic arteries, and death occurs slowly; at other times, the cessation of the heart's action follows promptly, having been preceded by an exceedingly short interval of feeble, arythmic contractions. In man the effect on the heart varies, according to the degree of the sclerosis of the coronary arteries. Leyden therefore distinguishes four classes of the disease: 1. That in which, although the coronary arteries are sclerotic, their function is not essentially impaired, and the nutrition of the heart is not affected; 2. There is an acute thrombic softening, or hæmorrhagic infarctus, of the heart-muscle, called by Ziegler "*myomalacia cordis*," and corresponding to *encephalo-myomalacia;* the affected portions break down or undergo fatty degeneration, and thus prepare the way for an ultimate *ruptura cordis;* 3. Here are found disseminated patches of fibrous induration (*myocarditis fibrosa*), which occur chiefly in the vicinity of the apex, and, by thinning the walls of the ventricle, may occasion *aneurisma cordis;* 4. Spots of fibrous induration exist in conjunction with circumscribed areas of softened tissue, as a result of thrombi. Here, evidently, the atheromatous change in the coronary arteries has not advanced steadily, but with periods of exacerbation and subsidance.

According to the clinical history, one may distinguish three classes of cases: 1st. The course of the disease is acute, and results in sudden death. After certain prodromata, such as vague anginous symptoms, dyspnœa, dizziness, etc., the patient faints, is seized with a sudden, intense angina pectoris, and presenting signs of cardiac failure, such as *œdema pulmonum*, expires. The autopsy reveals, aside from a possible rupture of the heart, areas of fibrous induration and recent hemorrhagic softening. 2d. The course of the disease in this class of cases is subacute, and is witnessed most often in men about sixty

years of age. Symptoms of cardiac disturbance, which may have obtained, at length increase in severity; attacks of angina become more frequent and intense, cough and dropsy augment, and finally, after weeks or months of cardiac asthma and angina, which latter, if it remits at intervals, does so only to make way for a sensation of nameless anxiety, the sufferer succumbs. The dilated heart is found to be the seat of fibrous degeneration and thinning. 3d. The progress of the disease is chronic, and is associated with advanced age. This class of cases Leyden also divides into three groups: *A.* Characterized by sudden attacks of angina; *B.* the existence of a serious cardiac lesion is revealed by shortness of breath, feeble pulse, inability to exertion, etc., which may exist for five, ten, or fifteen years, but physical signs other than a weak, irregular action of the heart are wanting; the compensation is evidently good. *C.* The compensation has been destroyed; orthopnœa and œdema are developed, and the heart fails in an attack of more than usually acute angina, or death approaches slowly, ushered in by signs and symptoms of venous congestion. The post-mortem appearances are essentially the same as already described.

Finally, Leyden is of the opinion that angina pectoris most frequently accompanies lesion of the heart-muscle, due to atheroma of the coronary arteries.

SCIENTIFIC ITEMS OBTAINABLE FROM THE CREMATORIES. — General acquiescence in the process of cremation seems to be steadily growing among the people, if we may judge from the establishment of crematories. Some time ago an announcement was made from the Le Moyne Crematory that it would for the future be reserved for the service of the county in which it is built. We learn from the *Medical Record* that one is in process of erection in New York, one in New Orleans, one has been talked of in Chicago, and the *British Medical Journal* informs us that in the city of Edinburgh one has just been opened, whilst one is already in operation at Woking, one of the general burying places of London.

We trust that some of our scientifically disposed men may seize the opportunity thus afforded of so arranging the process of cremation that it may yield valuable facts to the science of medicine. The estimation of the amount of "ash" obtainable from the human body, or from any animal organism, as far as we are aware, has never been ascertained on a large scale, but by a judicious arrangement at the foundation of any crematory an extensive series of observations could be instituted which could not, under any other circumstances, be made. There will necessarily be kept, at the office of every such building, a record of age, name, sex, cause of death, etc., of every body cremated, and it would only be necessary to add the question of weight, the general condition of the body, and a few other items, to furnish a record of great interest in a scientific point of view. In order to do this satisfactorily, however, it will be necessary to institute, from the commencement, the practice of cremating the body in a shroud of definite quality, so that the ash resulting from the garments may interfere as little as possible with the definite amount of ash coming from the body itself. To this observance, by a very slight manœuvre, the public could readily be educated. The ash from the body alone would be to them more sacred than the same mixed with the residue from the garments.

Whilst the crematories could furnish facts relative to the ash resulting from the body as a whole, we are satisfied that the pathologist would do well to turn his attention to the incineration of definite weights of definite organs in various pathological conditions.

It is quite possible, even, that a series of observations in this respect may throw some light on the question of tuberculosis. Even if it merely revealed to us that a given weight of a tuberculous lung yielded only the same weight of ash as a normal lung, the fact would be worth recording. For this purpose it is a question whether fragments of many of the interesting specimens in many of our museums which have been preserved in simple alcohol could not with profit be incinerated, and the resulting information be appended to the record of the specimen. At any rate the chemical incombustible constituents of diseased organs could, we think, with profit be ascertained, with the hope that it would throw some light on the more complex question of morphology.

It is not necessary to say that valuable information may be obtained from the ash of such subjects as had been treated for a prolonged period with iron, mercury or arsenic. It may even happen that, by some extra care, the process of incineration may be the the most efficient means of detecting poisoning by the last mentioned substance. Of course we do not forget that, without some precaution, the salts of arsenic and mercury would be volatilized, but whilst they are volatilized they must also, at a reduced temperature, be again deposited, and it remains for the chemist to determine the most efficient contrivance for recognizing its deposition.

CHOLERA AND PERSONAL HABITS.—The letter from our regular correspondent in Paris, in the JOURNAL of last week, was chiefly occupied with an account of the recent prevalence of epidemic cholera in that city; the writer selecting his facts principally from official reports and the discussions in the medical societies. This week we give another letter on the same subject, from an occasional correspondent who derived his information more from personal observations and inquiries during a temporary stay in Paris while the disease was in progress. Both correspondents represent the disease as commencing among the poorest and most unsanitary part of the population, the "rag pickers," and in the quarters occupied by them. Both emphasize the statement that those who were addicted to habits of dissipation and personal uncleanliness furnished by far the larger proportion of those who fell victims to the disease. And another writer states that of those admitted to the hospitals, at least 60 per cent., were known to be addicted to the habit of *drinking*.

The same general fact has been observed regarding every cholera epidemic of which we have a history. And yet, while our sanitarians and State Boards of Health have very properly issued circulars, urging upon the attention of municipal authorities and the people generally the necessity of strict cleanliness and ventilation of sewers, streets, houses, etc., as measures of prevention; comparatively slight allusions have been made to the equally important prophylactic effect of personal habits of temperance and virtuous living. We do not speak hastily when we express the opinion that indulgence in the use of fermented and distilled drinks with the personal irregularities of life occasioned thereby, have in past epidemics of cholera determined more attacks of the disease than uncleanly streets, bad sewerage, and imperfect house ventilation combined. In saying this we do not desire to detract in the least degree from the importance of giving the strictest attention to the latter by municipalities and health authorities everywhere. But more efficient means should be employed to impress the fact upon the minds of all classes of people, that attacks of epidemic cholera are directly invited by personal excesses and habits of intemperance. Such habits not only invite attacks, but they greatly increase the tendency to fatal results when attacks do occur.

AN INTERNATIONAL SANITARY CONFERENCE.—In an editorial in the *British Medical Journal* of Dec. 20, 1884, allusions are made to the international sanitary conferences on the subject of preventing the spread of epidemic cholera, held first in Constantinople in 1866, and second at Vienna in 1874, and another conference is suggested at the present time as likely to be productive of much good. At the conference of 1874 the efficacy of both maratime and land quarantine was denied, and only a limited amount of the former, coupled with inspection and detention of the sick, was deemed admissible. The establishment of an International Sanitary Commission, for practically enforcing the policy agreed upon, was then proposed, but never carried into effect. Since that time England has strictly adhered to the principles adopted at the Congress of 1874, only perfecting its practical details, while the continental nations, on the first appearance of cholera in Egypt, rushed back to all the cruelties and absurdities of both maratime and land quarantines, aided by sanitary cordons of the most absolute character. And yet while England has been unsparingly denounced, not only on the continent of Europe, but by some in our own country, as wantonly risking the safety of all Europe by adhering to her well-considered system of inspection and detention of the sick, we see the cholera, in its own good time, commence at Toulon and march steadily on, not by way of Liverpool or London, but directly through France, Italy, and some parts of Spain until it meets the cold weather of autumn in the more unsanitary streets of Paris. The suggestion of the *British Journal*, in favor of another International Conference at an early day, is a good one.

DEATH OF DR. HENRY A. MARTIN, OF BOSTON.—We have just received an interesting obituary notice of Dr. Martin, so long well known in connection with the cultivation and supply of vaccine virus, and who died on the 7th ult. We shall find room for the obituary in our present issue.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.—MEETINGS FOR DEC. 1 AND 15, 1884.

We were furnished with full reports of these meetings by the secretary, but the columns of the JOURNAL were so occupied that we had no space for them, and hence give the following abstract:

At the meeting of December 1, Dr. Robert Tilley presented the case of a boy, aged 6 years, who had received a very extensive lacerated wound of the scalp and face, but which, by a careful exercise of surgical skill, had been so repaired as to leave comparatively little deformity.

Dr. W. W. Jaggard read an interesting paper on "Palliative Measures in Ruptured Extra-Uterine

Pregnancy," which has already appeared in full in the columns of the JOURNAL.

Dr. D. A. K. Steele reported, in detail, three cases of ovariotomy, one of which was followed by death, the other two recovered. The fatal result in the first case was determined by peritonitis, apparently the result of a sponge accidentally left in the lower part of the peritoneal cavity, as proved by a post-mortem examination. The other two cases were accompanied by no unusual symptoms or modes of procedure, and made good recoveries.

Dr. C. T. Parks reported three cases of laparotomy, two for the removal of ovarian cysts, both terminating in recovery of the patients. The third was for the removal of a supposed fibroid tumor of the uterus in a woman who had never borne children. The tumor occupied closely the entire cavity of the pelvis, causing much difficulty in defecation and urination, and was firmly fixed in its position. An incision through the abdominal walls was first made sufficient to ascertain that the tumor was not attached to the intestines. The incision was then enlarged and an effort made to lift the mass of morbid growth so as to remove it entire, either with or without the uterus and its appendages. This was finally done by the aid of an assistant pressing upward through the vagina, and the entire mass, with the uterus, was drawn through the abdominal incision. A sufficient amount of the cervix was found unaffected to constitute a good pedicle for the ligature. A solid rubber cord was passed around the narrowest part, and drawn as tight as possible. The diseased mass was then cut away half an inch above the ligature. While the surgeon turned to lay the diseased mass on the table, the rubber cord rolled over the free end of the stump, and the latter fell back into the pelvis, and a torrent of blood flowed from the severed vessels. It was immediately seized between the thumb and fingers and again drawn through the abdominal incision when the bleeding stopped. The pedicle was then transfixed and tied in halves with strong silk ligatures. After cleansing carefully the pelvic and abdominal cavities, the pedicle was dropped back to its place, the intestines, which had been forced out during the operation, in spite of the most careful efforts of assistants to prevent, were returned carefully, and the abdominal wound closed. The whole operation occupied nearly two hours, but the patient was placed in bed with only moderate symptoms of shock, and in six hours reaction was well established, and the patient had some sleep. This was followed by persistent vomiting for twelve hours, when it ceased for about the same length of time, and the pulse and the temperature were favorable. The vomiting then recurred and continued until the death of the patient, forty hours after the operation. A superficial post-mortem examination, which was all that could be obtained, showed no hemorrhage, only slight effusion into the peritoneal cavity, but about six inches in length of the ilium in a state of complete gangrene. No twist or strangulation of the intestines was found to explain the occurrence of the gangrene.

The cases reported by Drs. Steele and Parks, elicited remarks by Drs. Tilley, Angear, Etheridge, Bogue, and others, and at a late hour the society adjourned.

At the meeting of December 15, Dr. J. B. Murphy reported two cases coming under his observation of what he regarded as Actinomycosis. The first was in the person of a young woman, the other in a young man. In both the fungus commenced its work around the neck of a tooth, giving rise to alveolar abscess, in the pus from which the fungi were shown by the microscope. Both cases recovered; the first speedily after the extraction of the tooth, but the other continued until an abscess formed behind the angle of the jaw and another in the neck. The diagnosis of Dr. Murphy was confirmed by Dr. C. Fenger, but its correctness was doubted by Dr. Tilley and others. The discussion and microscopic examinations occupied the whole evening.

STATE MEDICINE.

REPORT OF PROCEEDINGS OF THE ILLINOIS AND WEST VIRGINIA STATE BOARDS OF HEALTH.

While the various subjects embraced under the head of "State Medicine" have, within the last few years, received more attention from physicians than during former years, there is still much need of awakened enthusiasm relative thereto among the toiling thousands of the profession, while, as to the citizens in general, the work of enlightenment upon such subjects has just commenced. Here, as elsewhere, the "harvest is ripe, but the laborers are few."

It might be expected that every physician, at least, should be an active, working sanitarian; but, as yet, "curative" medicine has its engrossing duties, and either time is wanting or pecuniary necessity is such as to prevent a large portion of the hard workers from giving more than a passing glance at the subject mentioned.

Of all the different departments of "State Medicine" it is no doubt true that "Public Hygiene" is the one that should be most persistently taught the people in general. Many other departments may be regulated, or practically carried out, by the efforts of the few. But without the coöperation of an intelligent public, the individual members of which have been brought to see the need of the precautions or active efforts that sanitarians can so well portray, we cannot hope for more than a minimum of practical good results.

But how shall they be taught without a teacher? We have a few teachers to be found in Boards of Health, Sanitary Societies, and as individual sanitarians; but, as yet, such teachers are too closely confined within narrow limits.

Among the best text-books for the dissemination of sanitary knowledge, are the reports of the various State and local Boards of Health; but such reports seldom reach others than those already imbued with the true principles of sanitation. The *facts* con-

tained in such reports should be brought before the entire medical profession, and, indeed, before each citizen.

We have before us the Fifth Annual Report of the Illinois State Board of Health, and the Third Annual Report of the West Virginia State Board.

The Boards of Health, both of Illinois and West Virginia, act as Examining Boards to determine the qualifications of those entering the practice of medicine and surgery, thus supervising two departments of "State Medicine." While we may differ from others as to the policy of delegating both duties to one Board, we cannot but acknowledge that the work of the Illinois State Board of Health, for the last seven years, has achieved such good results that adverse criticism is not to be thought of, while the West Virginia Board, judging by the sample work since its organization, gives promise of advance, both as regards Public Hygiene, and the elevation of the interests of "Curative Medicine."

The last report of the Illinois Board is more voluminous than any of its predecessors. A work of over six hundred pages, and within it meat enough to sustain many workers in the cause, and enough of light to illumine a greater radius than heretofore. We shall only speak of its contribution to public hygiene, leaving detailed statements of the work as an "examining board" to others, or to a future time.

In the history of the epidemic of small-pox (1880–82) we find the following statement: "During the year 1881 there were seventy-nine different outbreaks reported outside of Chicago, causing an aggregate of seven hundred and seventy-four cases, with one hundred and seventy deaths, and in all but six of these outbreaks the origin was directly traced to newly arrived immigrants or to intercourse with places infected by immigrants."

In January the secretary reported to Dr. Smith, of the National Board, that "by the observance and enforcement of the instructions of the State Board there were not, at the outside, five hundred cases of small-pox and varioloid in a population of three hundred thousand souls."

Such "instructions and regulations" by which this result was accomplished was the vaccination of school children and adults, with bovine virus mainly, by competent physicians, who were obliged to certify to the result of their work, and not merely that they had performed the operation. He states that "the efforts of the board met with but little opposition from the people." All this corresponds with the course of events and facts that occurred under our own observation and by our direction in Indiana during the same period.

This is the "key-note" of the whole matter relative to the prevention of small-pox. We need not notice further. Divinity, through its "instruments," has given us knowledge of the means by which small-pox can be prevented, and yet as there are thousands who fight Divinity, we cannot be surprised that numbers of the same class, ignorant or depraved, fight the good things He sends, even though they perish themselves. It is not proper that sanitarians should either skulk behind barriers or raise the white flag to avoid the onslaught of such natures. A steady, vigorous, onward course is called for.

While the scientists, physicians, and sanitarians are searching for the cause of diseases, with a view of more effectually preventing them, and while means are being sought to prevent other diseases upon the same plan as is known to be effectual in small-pox, it appears absurd for any one to raise opposition to the most stringent enforcement of vaccination of children and adults (both native and immigrant) until all have been successfully vaccinated, and then to continue such work with children. If this were done all tentative measures would be useless. Isolation, quarantine, disinfection (for this special disease) would all be things of the past. We can simply say, that among the army of workers in this special department of "public hygiene," that Dr. Rauch, aided and supported by his board, has accomplished much by his bold, energetic, and persistent efforts, and this mainly by impressing the truth upon the minds of others, causing responsive action.

Dr. Rauch, the secretary of the Illinois State Board has, as is well known by sanitarians, paid particular attention to the part taken by immigrants in the introduction and spread of small-pox in the United States and Canada, and he advances the following proposition as having been demonstrated by the operations of the Immigrant Inspection Service of the National Board of Health:

1. The immigrant is a prime factor in the origin and continuation of small-pox in the United States, on the one hand, even if protected himself, often being the bearer of the contagion in clothing and other effects; and on the other, if unprotected, frequently becoming the victim to the disease and propagating it to others.

2. Local efforts and expedients, either by States or municipalities, are inadequate to the control of small-pox in any given community or commonwealth so long as the contagion and material for the propagation of the contagion, continue to be replenished by repeated accessions of unprotected or improperly protected immigrants.

3. "A cautious sanitary surveillance of immigrant travel from the port of arrival to the point of ultimate destination, such surveillance to consist of repeated inspection, vaccination of all unprotected, systematic observation of suspicious sickness, prompt removal and isolation of small-pox or other contagious cases, disinfection of baggage, clothing, cars, etc., is essential to supplement whatever preventive measures can be secured before embarkation, during the voyage or at the port of arrival."

These propositions are considered separately, and proven to be true. They contain both the object that has inspired the actions of the Board and its able secretary, and also the result of such action.

The secretary gives a detailed statement as to vaccination of school children. The order for the prosecution of such work being issued December 1, 1881, and also supplement orders of January 21, 1882, January 23, 1882, and September 20, 1882. At the time of issuing the first order there were 713,431

enrolled scholars in the State; less than one-half had been vaccinated; within sixty days nearly ninety-three per cent. of them in attendance had presented evidence of being successfully vaccinated, an increase from four hundred and fifty to nine hundred and forty of all school children vaccinated.

The secretary estimates that the recent small-pox epidemic cost the State a round total of nearly a half-million dollars; but if estimate is made upon the value of the time consumed in sickness, the diminished productive power and the expense of supporting the disabled survivors, and including the money value of lives lost, the amount would be swelled to a grand total of over fifteen million dollars. But we can do no more than to commend the utterances relative to small-pox and its prevention that are found in this report for the study of every one interested in having the fatal disease stamped out.

Such a work as has been accomplished in Illinois, cannot, we think, have been excelled in any other State, and this owing largely to the liberal ideas of the secretary and Board of Health, as to what was needed, and the energy with which it was prosecuted. There was neither hot-headedness nor hesitancy. The opposing forces appear to have been met and handled with fearless tact.

The Board of West Virginia cannot show by its reports the same *amount* of work accomplished as that of the Illinois Board, as it was only established in 1881, the act creating it being adopted March 8, 1881, the same year and month that the act creating the State Board of Indiana was enacted; but we cannot criticise the *quality* of the work as shown by this report. Like the Illinois law, that of West Virginia empowers the Health Board to act also as a board to determine the qualification of those engaging in the practice of medicine, and otherwise to "regulate the practice."

THE REPORT OF THE SECRETARY TO THE GOVERNOR OF THE STATE

Gives the proceedings of the several meetings of the Board, copies of circulars issued, of blanks for certificates of qualifications of physicians, etc. The work of the Board does not embrace the collection of vital statistics, and in viewing the financial statement this fact must be kept in mind. We find that the total receipts from special tax, fees, etc., from June 13, 1881, to August 10, 1883, were $1,745; total disbursements, $3,241.51. The excess of disbursements over receipts ($1,496.51) was paid by the State. The salary of the secretary was $500 per annum. Certainly all these figures show that the work in West Virginia has been hampered by want of funds; this, however, is the case in nearly all States where similar work has been organized. It is also a fact that secretaries of boards of health, as a rule, must act because of personal interest in the welfare of the work, certainly not because of the money returns.

Both Dr. Rauch and Dr. Reeves are men who have worked the matter from the ground up; but through all their labors have been somewhat more fortunate than others in escaping trouble in shape of onslaught from professional enemies or political aspirants. THAD. M. STEVENS, M.D.

Indianapolis, Indiana.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS—THE CHOLERA EPIDEMIC.

FROM AN OCCASIONAL CORRESPONDENT.

PARIS, Nov. 22, 1884.

MR. EDITOR:—Believing that a short account of the recent epidemic of cholera which has visited this city may be of interest to some readers of the JOURNAL, I send you a brief description of what it came in my way to observe.

I reached Paris, Oct. 20. In Berlin the weather had been cold with frequent drizzling rains and a dull, dark and dismal atmosphere. I was told that a somewhat similar state of things had also been present in Paris, although the weather was fine on my arrival. During the four weeks of my stay in this city, there have been two rainy and two or three cloudy days. The weather during the remaining time has been generally clear, and the temperature cool, the midday averaging perhaps 50° F. to 55° F.

The drainage of the greater part of the city seems to me excellent. The sewers are supplied with an abundance of water from the public fountains and other sources, and the mains are regularly opened in the streets or beneath the sidewalks for the purpose of additional flushing. I have not been able to detect any odor from the sewer openings, and in the houses where I have been there was not the slightest perceptible trace of sewer gas.

I did not go through the sewers, but a friend who travelled some five miles through main or contributary sewers on Oct. 25, described the condition of the sewerage as very dilute, and except in a few localities at the junction of trunk sewers there was no offensive odor. The telegraph system of Paris is also conveyed in the interior of the sewers, and one of the men constantly employed in repairs and new construction said that he had not been sick or in any way unpleasantly affected by the work in the sewers during five years of service.

In some limited districts of Paris, the improved sewerage system has never been fully carried out, and one may there see still the old form of gutter near the sidewalk, with more or less offensive and discolored contents. The older houses are also built in the shape of a square block inclosing a small court-yard where the water supply for the entire building is located, and the drainage, except from the latrines, flows through the court-yard and under the main entrance to the street in an uncovered gutter. Here there may at times be noticed a somewhat offensive odor.

The food supply seems to be exceptionally good. I visited the great central market "les Halles" at one o'clock in the morning. I could observe nothing in the least degree questionable in quality and was

struck by the absence of "second-class" articles of food consumption. There is evidence of a vigorous inspection of articles of food supply.

The water is of surface origin and is soft in quality, clear in appearance and free from perceptible odor or taste. I believe the house service is generally by a supply tank and not by direct flow from the mains.

I have no knowledge of the milk supply further than the fact that in several places of pleasure resort there are stables in which cows are kept and visitors enter the stalls and for a small price receive a cup of milk warm from the cow. I tasted no milk which impressed me as bad, and saw no dirty milk.

Under these conditions cholera appeared in the city, and after four or five days had assumed such proportions in the form of an epidemic that it was impossible to further conceal the fact of its existence.

The first cases occurred in one of the poorest districts in the city and were for a time confined to certain large tenement houses, inhabited by rag-pickers and occupied in part as a depository or depôt for rags of all kinds. The first patients were without an exception those of intemperate and filthy habits, who were badly housed, insufficiently nourished, poorly clad and much exposed to cold and wet. Many of the earlier cases died without treatment or were treated at their homes, but soon arrangements were adopted for the immediate transportation of cholera patients to the various hospitals, where special isolated wards were devoted to their care. Removal from the patient's home was never made obligatory, nor was it considered necessary to place the infected houses in quarantine or to establish police supervision over the residents. At this time no restrictions were placed on travel between Paris and the southern parts of France.

For some days after the official announcement of the existence of an epidemic the disease increased in severity and extended from its point of first appearance to nearly every ward of the city. In nearly all instances some means of infection from previous cases could be traced, but in some cases it was not possible to discover the manner by which the disease had been acquired.

A volunteer medical service was at once established, and with the coöperation of the municipal sanitary board and the aid of the police, the city was thoroughly patrolled and every offensive place either cleansed by the authorities or by the owners or occupants of the property. The smell of disinfectants was frequently noticeable, and the public streets and squares were, if possible, kept even more scrupulously clean than before. In many streets the gutters were constantly flushed by opening the hydrants, and the public urinals were disinfected. Each day the Mayor issued an official bulletin in which the number of cases under treatment and the number of new cases was announced, as well as the rate of dissemination of the disease by wards in the city. It was stated that the highest rate only amounted to one patient to 17,000 inhabitants. The cases were usually of a mild type; the mortality never, to my knowledge, exceeded 33 per cent. of the number of patients, and except in an outbreak which occurred in an asylum for the aged supported by the scanty means of a few sisters of a religious order, there was no appearance of especial virulency about the epidemic. In this asylum the inmates who took the disease were, I believe, all above 70 years of age, and the mortality, as might have been expected, was relatively very high. Here also occurred the only instance of the entire epidemic in which a nurse or attendant was known to take the disease. One of the sisters, who was constantly in the room devoted to cases of cholera, is said to have taken the disease and, after two days, died from it.

As may be supposed, many persons then in Paris were much alarmed by the presence of cholera, as well as by the apprehension that neighboring cities might establish quarantine against persons or commerce from French ports, and a general exodus of travellers and strangers at once took place.

It is estimated that within four days more than 30,000 people crossed the channel to various ports in England, nearly all of whom came from Paris. The hotels became literally empty. Many families who were established for the winter at once left the city, and a vast change was immediately noticeable in the clubs, thoroughfares, and fashionable restaurants. Strange to say, the resident inhabitants of Paris did not become in the least frightened. No signs of a panic were at any time observable. The theatres were better filled during the first week of cholera than during the previous week, and no change was noticeable in the behavior of the common people, that element which is generally most easily frightened by any unusual occurrence.

After about ten days of maximum severity the number of cases and the gravity of the disease became gradually diminished, until to-day the epidemic is at an end. Cases of so-called "choleraic" disease were reported for some days after the subsidence of true cholera, but these were uniformly of mild character, and ended in every instance by recovery.

The reports of cases in the military establishments are very unsatisfactory, and are not taken into account, though there were doubtless a few cases in the barracks.

The reported treatment consisted in a general way in the moderate use of anodynes, the administration of stimulants, the application of external heat, and the nourishment of the patient by bland food in liquid form. In some cases nutrient enemata were employed, and the use of saline intra-venous injections was also reported. No special mode of treatment has seemed to influence the disease in an appreciable manner. The favorable change in the epidemic and its final subsidence are generally referred to the lower temperature, and particularly to the frosts of the middle of November.

In review we have the outbreak of a limited epidemic in the centre of a large city manifesting itself especially among rag-pickers, and for a time apparently confined to them and to their habitat alone. Afterward the disease spread to a moderate extent, and was reported from nearly every part of the city. The patients were almost without exception persons who were underfed, insufficiently protected, dissolute,

and intemperate. To my knowledge not one stranger was attacked during the entire epidemic, and no English-speaking person was known to suffer from the disease.

But few residents of Paris left the city, and there was no appearance of fright, much less of panic, to be observed. The disease is entirely quenched, and will doubtless not recur until the approach of warmer weather, when it will, in the opinion of most of those with whom I have spoken, again appear, and will far exceed the present epidemic, both in the extent of its ravages and in severity. The disease has already been recognized in Nantes, in Yport, in Brussels, in Marseilles, in Toulon; it has crossed the border into Northern Italy; it has invaded Spain, and it has been reported in some other places. It is to be feared that the advent of spring will arouse the disorder anew, and that the entire west of Europe will be devastated by it.

The epidemic just ended has not contributed anything material in the support of the theories of Professor Koch as to the origin, or "Wesen," of cholera. I have not been able to find, either here or in Berlin, any ardent support for the claims of the comma bacillus as the cause or essential element of the disease.

The importance of the bacillus of tubercle is generally conceded, and in Berlin I saw specimens which were made for purposes of diagnosis, thus showing that the presence of the organism is recognized as of practical value in daily routine; but the same authority spoke of the bacillus of cholera with some degree of distrust, and expressed the opinion of the profession as being that the bacillus is a concomitant, but not clearly the cause, of the disease.

It is yet too early for the official reports of the sanitary authorities and the medical department upon the recent epidemic in Paris, but I am led to believe that efforts are being made to utilize the presence of the disease as a study for guidance in the expected revival of the disorder in the near future.

It is to be hoped that this important information may be published in advance of the threatened outbreak of cholera; but, in the meantime, every precaution is being employed to secure the best possible sanitary conditions, which must favor a mitigated severity in any epidemic disease. A. N. B.

BERLIN LETTER.

BERLIN, Nov. 24, 1884.

Wandering Kidney — Hydronephrosis — Perinephritic Abscess—Abdominal Fistula.—In my last letter I mentioned a case of wandering kidney which I saw at the poli-klinik of Dr. Leopold Landau, Privat Docent. There is so much of general interest in this subject, and so much of especial merit in this case that I translate its history from "Die Wanderniere der Frauen"—a small brochure too little known in America, and yet one in which the whole subject is reviewed by Dr. Landau in a masterly manner: "C. M., 60 years old, has borne two children, one at forty and the other thirty-six years age. At her last confinement she had a prolapse of the uterus. For the last ten years she has suffered from pain in the loins, constant uneasiness in the abdomen, cardialgia, gastric derangement, dragging pain in the loins and pressure upon the bladder. About eight years ago she first noticed a wandering swelling in the abdomen; the pain, however, from time to time, disappeared, and several physicians who examined the case thought it an echinococcus of the peritoneum, or an ovarian tumor, or a tumor of the liver. On the 14th of Sept., 1879, she entered my poli-klinik.

"*Present Condition.*—A pale, emaciated woman, with prolapse of the anterior vaginal wall and uterus. In the right lumbar region a firm, elastic, round tumor could be felt, which extended upwards to the liver (being disguised by the latter), inwardly as far as the linea alba, outwardly to the axillary line, and downward to within 3 ctm. under the level of the umbilicus. By pressing downward a sulcus can be made out between it and the liver. The percussion sound over the tumor is a dull tympanitic, and is dull at its highest point. In the line of the axilla it is dull. Puncture is made with a fine Dielafoy needle, and about 3 cbctm. of water-like fluid is withdrawn, which is white by transmitted light, clear without any form elements, with no albumen, and rich in chlorides. The diagnosis was between echinococcus of the liver or kidney, or a hydronephrosis of a wandering kidney. After another examination of the woman in different positions, on the 20th Sept., 1879, and after another puncture (removing also about 3 cbctm.), I fixed upon the following day for the operation. On this day, however, the swelling disappeared, and in its place percussion disclosed the intestine only. It was impossible to arrive at any definite conclusion, even after elaborate palpation and examination. On questioning the patient, who found herself in good condition, she stated that after yesterday's examination she had voided a very large amount of clear light urine, which did not seem to be at all strange to her, as the amount of her urine varied. The urine itself was normal. It was now questionable whether the contents of the cyst had emptied itself through the fine puncture of the sac into the peritoneum, or whether it had emptied itself through the natural channels. In the former case the diagnosis would be doubtful; in the second it would be hydronephrosis. After an examination of different parts of the body, especially in the knee-elbow position, the sharply-bent and tortuous urethra might have unwound itself, or pressure upon the sac having been removed (by puncture), the valve-like opening might have opened itself. For the first weeks, however, the diagnosis was doubtful, as the pathognomonic urticaria of echinococcus was not present, and there was no re-appearance of the tumor. Again, in Feb., 1880, the patient returned, complaining of an unbearable pressure in the abdomen, and with the same train of symptoms as formerly. The diagnosis of hydronephrosis was now certain, and was confirmed by a careful chemical examination by Dr. Lewin (Priv. Docent) of a large quantity of fluid which had been withdrawn by aspiration. 'The fluid was not clear as far as could be seen by gas-

light; it was of alkaline re-action; the cloudiness disappeared upon the addition of nitric acid. This showed it to be due to phosphatic salts. Uric acid crystals were not to be found. On account of the uncertain light the test for uric acid by the *murexid* re-action was not shown. Nevertheless it was certainly shown that the urates were present, for after the precipitation of the phosphates the addition of mercuric nitrate to the fluid a white precipitate of the *urate of mercurous oxide* was seen. The urates are to be shown more easily by the change into nitrate of urea. When the fluid, after the addition of nitric acid, was left to natural evaporation, there were found very characteristic rhomboidal, tile-like crystals, overlapping one another, of nitrate of urea.' Some time after this it was my good fortune to witness the return of the cyst-filling and emptying process, with the same symptoms as regard the excretion of urine. At last the sac did not disappear again. The general condition of the patient was growing worse, and a trip to Carlsbad, on account of her gastric troubles, was advised. A continued fever followed upon this trip. Formerly the puncture gave exit to a clear fluid; now it contained many pus corpuscles, so that the time of operation was not to be postponed. The tumor had grown larger, was more tense, and was very sensitive to the lightest touch. On the 20th June, 1880, I undertook the operation, starting the incision from the bend of the ribs upon the right, parallel with the ob. int. muscle, toward the umbilicus—a distance of 12 ctm. This disclosed a fleshy-looking cyst-wall, which, on account of its great tension, could not be grasped by the hand, hence it was punctured, and about 300 cbctm. of pus-like fluid were withdrawn, after which the incision was extended 3 ctm. to the axillary line. It was now easy to grasp the tumor upon all sides. It was now seen to extend up to the liver, and to be attached to it; downward and anteriorly it was attached to the gut, and outwardly to a *second* tumor, which extended to the spinal column. Puncture showed this second tumor to be an abscess caused by perinephritis. Its contents were thicker, tougher, and more like pus than the fluid in the hydronephrotic sac. On account of the perinephritic abscess total extirpation was out of the question. The walls of the cyst were attached by sutures on each side to the abdominal parietes, the sutures being inserted vertically to the incision. By this means the peritoneum was protected from fluid entering its cavity, which proved to be of great importance, as the walls of the perinephritic abscess gave way, and an abundance of pus-like fluid escaped, when an attempt was made to grasp the tumor from behind and lift it out of the cavity. A second incision, in the same direction as the first, is made into the sac, whose walls have been sutured to the abdominal parieties, through the perinephritic abscess, which is separated by the walls of the atrophied kidney, thus establishing a common wound cavity. The part of the hydronephrotic sac lying next to the anterior abdominal parieties is not the usual pelvis of the kidney, but the compressed atrophied kidney substance, which, upon incision, bled profusely, and had to be ligated *en masse*. The fluid thus obtained was like pus. The hydronephrotic sac, larger than a child's head, was everywhere covered with the compressed kidney substance. The opening of the ureter cannot be found. The sac is now attached by twelve more sutures, and drainage is established. On the 19th of July the whole wound is healed, having only an opening as large as the end of the finger, at the inner angle of the wound, through which a drainage tube 14 ctm. long is easily inserted into the cavity which gives exit to the urine, which was first excreted in small quantity, but afterward in greater abundance. The tube also permitted the washing out of the cavity. The pus-like fluid at first secreted soon cleared up, and became more like urine. The sac is growing smaller. The flattened, atrophied kidney chalices are getting thicker and hypertrophied. After three months and a half the ligatures came out. The papilla renalis can be felt at the inner edge of the wound, somewhat atrophied. The patient follows her daily avocations without any inconvenience."

The case is an interesting curiosity of medical literature. In my next letter I shall describe the treatment of *syphilis by massage*.

H. R. B.

NECROLOGY.

MARTIN, HENRY A., M.D. A man's best epitaph is written in his deeds. The emphasis of this truth finds expression in the history of Dr. Henry A. Martin, who died at his residence, in Boston, December 7.

Dr. Martin was born in London, England, July 23, 1824, and was the eldest son of Henry J. Martin, Esq., M.R.C.S. The family is traced down the centuries through a long line of distinguished sires, ennobled by race and deed. Gen. James Agnew, who was killed at Germantown while in command of the British forces, was his great-grandfather. He was the grandson of the Earl of Eglintonn, and was in command of British troops in Boston at the outbreak of the Revolution.

Dr. Martin was graduated at Harvard in 1845, and commenced the practice of his profession in the Roxbury district in 1847, where during an entire generation he has labored with a steadiness of purpose and faithful zeal equalled by very few in any calling. His attention was early called to the necessity of more thorough and systematic methods of vaccination to prevent the ravages of small-pox, and so widely was he recognized as the authority upon this subject, that upon the first serious appearance of that disease among our soldiers during the Rebellion he was summoned by the War Department to superintend the vaccination of the troops, going early to Fortress Monroe and other posts for that purpose. He then entered the service as one of the first "Surgeons of Volunteers," was Medical Director of Southeast Missouri two years, in charge of hospitals at Ironton and Cape Girardeau; was Medical Director at Norfolk and Portsmouth, Va., and Surgeon-in-Chief First Division Second Army Corps (General Miles), and was breveted Lieutenant-Colonel for "gallant and meritorious service."

After repeated failures to secure the successful cultivation of animal vaccine in America, Dr. Martin sent an agent to Europe, had the methods there used in propagating virus carefully studied, and with virus thus obtained he inoculated a herd of young animals, vaccinating and re-vaccinating at regular intervals, and in this way secured an unbroken series of the Beaugency stock of virus, which has been continued until the present. It is very probable that no man, even including the immortal Jenner, ever gave a more careful attention to the study of small-pox and the means of its prevention than Dr. Martin, and, except to the great discoverer, the world owes no man in this field of preventive medicine an equal debt of gratitude.

Dr. Martin has been indefatigable in his gathering of everything possible published upon this subject, and his literary collection is believed to be unique. By his aid a very considerable number of epidemics have been eradicated and numberless lives saved. His report on animal vaccination made to the American Medical Association, 1877, was very flatteringly reviewed and quoted from by all the leading medical journals and authorities in Europe.

Many years since he became interested in the use of elastic compression applied in surgery. This, after many experiments in great variety, resulted in the giving to the profession the pure rubber bandage now world-wide known by his name. This he applied to a great variety of purposes. In varicose ulcer and synovitis of the knee it has proved of such exceptional service that it may be safely classified as one of the most valuable contributions in modern surgery. He also originated the operation for tracheotomy without the use of tubes.

Dr. Martin was a man of fine physique and presence, possessed an excellent voice, an exceptional command of language, was a ready, fearless debater, once met as an opponent never to be forgotten, a firm and steadfast friend. He denounced show and pretence with Quixotic vehemence, while he recognized true worth and learning. In the literature of medicine he was a master, and never wearied in the study of history. Many a supposed invention of modern surgery has he traced to its real origin and demonstration in the long forgotten work of some ancient author.

He was particularly fond of art, especially that of engraving. His collection is filled with the rich treasures of the great masters, and his library is one of the most valuable medical libraries in Boston.

Knowing for eighteen months that he was the victim of an incurable disease, he kept steadily and calmly on in the usual routine of his life, seeing patients and pursuing his studies until two days before his death. He leaves a widow and four sons, upon two of whom the professional mantle has fallen. The following is a list of his most valuable contributions, and he leaves voluminous manuscripts, which in the hands of his sons, might be edited as a volume of interest and value:

"Ancient Medical Delusions." Boston *Medical and Surgical Journal*, 1858.

"Bertonnean and Husband's Method of Preserving and Using Vaccine Lymph." Boston *Medical and Surgical Journal*, Dec. 8, 1859.

"How to Vaccinate." Boston *Medical and Surgical Journal*, March 22, 1860.

"Remarks on Animal Vaccination." *Journal of the Gynæological Society* of Boston, April and June, 1872.

"Colle's Fracture and Dr. Carr's Splint." Boston *Medical and Surgical Journal*, Dec. 19, 1876.

"Animal Vaccination in America." *Medical Examiner*, London, March 1, 1877.

"Report on Animal Vaccination." Transactions of American Medical Association, 1877, 60 pp.

"Surgical Uses other than Hæmostatic of the Strong Elastic Bandage."—Transactions American Medical Association, 1877.

"A New Adhesive Plaster Especially Adapted to the Requirements of Modern Surgery." Boston *Medical and Surgical Journal*, Oct. 11, 1877.

"True Animal Vaccination." *Medical Record*, April, 20, 1878.

"Tracheotomy Without Tubes." Transactions American Medical Association, 1878.

"The India Rubber Bandage for Ulcers and other Diseases of the Legs." *British Medical Journal*, Oct. 27, 1878.

"Jefferson as a Vaccinator." North Carolina *Medical Journal*, Jan., 1881.

"On the Pure Rubber Bandage in Synovitis of the Knee Joint and its Sequalæ." Transactions of International Medical Congress, 1881.

"Toe-Nail Ulcer with its Treatment, Ancient and Modern." Toledo *Medical and Surgical Journal*, 1879.

HENRY O. MARCY, M.D.
Boston, Mass.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM DECEMBER 27, 1884, TO JANUARY 2, 1885.

McParlin, Thos. A., Lieutenant-Colonel and Assistant Medical Purveyor, granted leave of absence for three months, on surgeon's certificate of disability. (S. O. 301, A. G. O., Dec. 24, 1884.)

Girard, A. C. Captain and Assistant Surgeon, ordered from Department Mo. to Department East. (S. O. 304, A. G. O., Dec. 29, 1884.)

Johnson, Henry, Captain and Medical Storekeeper, directed, in addition to his present duties, to perform the duties of Assistant Medical Purveyor in New York City. (S. O. 301, A. G. O., Dec. 24, 1884.)

Ewing, Chas. B., First Lieutenant and Assistant Surgeon, Ft. Stanton, N. M., granted leave of absence for two months. (S. O. 304, A. G. O., Dec. 29, 1884).